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A CONTRIBUTION TO THE STUDY OF DISEASES OF THE NERVOUS SYSTEM.

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(*Continued from page* 396, *vol. xxxvi.*)

SEROUS CEREBRO-SPINAL MENINGITIS; SPINAL MENINGITIS; EPIZOOTIC HYDRORACHIS; LUMBAR TYPHUS; INFECTIOUS PARAPLEGIA; INTOXICATION.

UNDER these different designations, which indicate disturbances of a heterogeneous nature, the Veterinary periodicals contain a good number of communications concerning diseases of the horse and ox, which show a striking resemblance to each other in many respects. There is more especially noted a morbid condition of an *enzootic* character, which may affect various species of animals in the same locality—horses, cattle, and even poultry. The malady begins with feebleness, or even complete paralysis of the hind quarters, and which may extend to the fore quarters. This paraplegia generally leads to the supposition that the spinal cord in its lumbar portion is diseased, and there is an inclination to admit that, in the first place, there is congestion or inflammation of the envelopes, or of the substance of the cord. The *hæmoglobinuria* of the horse, and *puerperal apoplexy* of the cow, which were for a long time considered, the first a spinal congestion, the other a cerebral congestion, sufficiently prove this.

Excluding traumatisms, specific affections of a myopathic nature, and alterations in the peripheral nerves, which may give rise to symptoms of paralysis, more or less resembling those having their origin in the spinal cord, it is undeniable

that certain serious functional disturbances of the central nervous organs are not associated with anatomical alterations that may be revealed by a microscopic examination. Besides the effect of numerous intoxications, we might cite as an illustration the *ascending paralysis of Landry-Kassmaul*, seen in mankind, the lesions of which escape the most minute microscopical investigation.

The cases included in our subject may be arranged, with regard to their etiology, into three categories. In the first category are placed those cases, the cause of which is clearly demonstrated, and which, in putting the etiological agent out of view, we can trace the course of the disease. In the other cases, and especially those recorded in recent years, an hypothetical infectious cause has been invoked to account for the enzootic character of the disease.

Lastly, with regard to those in the third category, the various writers who have described them have not ventured to give an opinion concerning the morbific agent.

In all the cases there exists so close an analogy between the symptoms, that one might be tempted to attribute the disturbances to causes which are identical in their nature.

I.—Cases due to a Definite Infectious Cause.

As a type of these cases, to which the following clinical description can be applied, the symptomatic outline may be traced in this manner:

Symptoms.—The disease often commences under the following circumstances; in the morning, one of the horses which had apparently been quite well the previous evening, is found recumbent and unable to rise; in some instances, a certain degree of muscular weakness had already been observed during work. When excited, the animal may, by a great effort, raise itself on the fore limbs, and for a brief period assume the position of a sitting dog, which proves that the posterior part of the body is paralysed. The tail is flaccid, and the urine may be voided involuntarily; this is more particularly the case in mares. No other symptoms of disease are noted. The appetite is preserved, and there is no fever. The temperature vacillates between 37·5° and 38·5° Cent., while the pulse is full and regular (50 to 60), and the respiration is calm. The animal's expression does not indicate any psychical disturbance; the eye is bright, the ears mobile, and the sensibility is generally normal.

It is scarcely necessary to remark that in these circumstances, the practitioner may believe himself to be in presence

of a case of sprained loins, or some traumatic lesion; and in order that his examination be complete, he resorts to means to set the animal on its feet. But if it must be raised, slings have to be employed, as the hind limbs cannot take any share in supporting the body.

Soon other cases are added to the first, and often these afford the opportunity of seeing the malady develop itself, and observing the earliest symptoms before the paralysis is manifested. In addition to a certain degree of muscular weakness, there is sometimes remarked an immoderate thirst.

It may happen that the patient will rest for some days in a sternal position, maintaining its appetite, and merely manifesting a paresis or paralysis of the hind quarters. But with some other animals, the malady progresses from the second day, that is, the paralysis extends to the anterior extremity, when they maintain a lateral decubitus, and are no longer able to raise the head. When the head is lifted, they can take some nourishment if there be no dysphagia. The temperature may descend below normal, and the pulse become more frequent, attaining 80 to 90 beats per minute. According to certain authorities, the animals may exhibit cerebral symptoms at the last stage, denoted by spasms or regular movements of the limbs, imitating those of the trot or gallop, and doubtless resulting from hallucinations. In exceptional cases, the urine assumes a reddish tint from the presence of red blood corpuscles in it. Death supervenes in acute cases in from one to three days; in other cases it occurs towards the eighth day; it is often preceded by an abundant perspiration.

In cases in which recovery takes place, convalescence is very protracted, and some degree of muscular weakness may persist for a month or longer. Occasionally, complete recovery suddenly occurs, as in bovine parturient apoplexy.

Lesions.—At the autopsy, it is noticed that the blood is black and not coagulated; there is muscular degeneration; the vessels of the cerebral pia mater—especially at the basilar portion, as well as the spinal pia mater—are injected, and there may even be hæmorrhagic patches; finally, there is serous effusion into the sub-arachnoidean cavity of the brain, medulla oblongata and spinal cord. The ventricles also sometimes contain a certain quantity of fluid. In other instances there are no lesions of the central nervous system.

Poisoning by moulds or fungi produces symptoms analogous to those just described as due to disturbances from a definite

cause. The affected animals had eaten mouldy forage—such as straw, meal, oats, wheat, or the residues of malt and roots. It is true that the fungi frequently only give rise to a dermatitis, a rhinitis, a conjunctivitis, or a stomatitis indicated by simple pytalism; then a more or less serious gastro-enteritis, or polyuria, which may lead to parenchymatous nephritis; as well as mycosic bronchitis and pneumonia. In addition there may be also nervous derangement, indicated by cerebral or spinal, and even peripheral depression, rarely by excitement of these parts.

Although our knowledge of this subject is still very incomplete, yet clinical experience has demonstrated that the disturbances at first are different according to the kind of phyto-parasites.

It is also probable that the same fungus acquired different chemical properties, in accordance with the conditions in which it finds itself placed; this explains its toxic action in certain circumstances and its innocuousness in others.

Clinical Observations on the Horse.

1. In Holland, an enzootic malady, formerly known as *lumbar typhus*, has frequently been witnessed. In 1851, M. Mazure, Senior Veterinary Surgeon in Zeeland, a province in which the disease in question is particularly prevalent, considered it as due to poisoning by moulds.* Other practitioners, and among them Lameris and Billroth, in the province of Groningen, have confirmed this opinion.† Lameris discovered the *Urocystis occulta* and the *Puccinia graminis* on the straw of the rye and oats which the horses had eaten. The disease did not make any more victims after the supply of this mouldy straw was stopped. Other animals, located some distance from those alluded to, were attacked after consuming the same fodder. For the symptoms and course of the disease, reference must be made to what has been already said. Cattle have been often attacked at the same time as the horses, though they presented some other symptoms which we shall mention hereafter.

2. A boatman in the neighbourhood of Maestricht consulted us, in 1879, with regard to his horse, which had been paralysed behind since the previous evening.‡ In less than three weeks he had lost two horses, and this, the third, which was a recent

* "Het Repertorium," 1851.
† "Tydschrift voor Veeartsenykunde en Veeteelt," 1875.
‡ "Verslaag aan den Koning enz," 1879.

purchase, showed exactly the same symptoms as those which succumbed had done.

On our arrival we found the horse completely paralysed; the pulse and temperature did not indicate fever, there was still a little appetite, and the visible mucous membranes had a slight icteric tint. On the following day the horse died, but, unfortunately, we did not have the opportunity of making an autopsy.

The cause of the disease was readily discovered. In consequence of floods, the clover hay was mouldy in the highest degree. However, either because the owner of the horses did not accept our opinion, or because his financial condition would not permit of his procuring hay of a better quality, a fourth horse received the same food and soon shared the fate of the others, as it died after showing the same symptoms as they did. Then the boatman resolved to obtain fodder of a better quality, and he had no reason afterwards to regret his decision; he was now convinced that he owed the loss of his horses to poisoning by mouldy hay.

3. Professor Vogel, of Stuttgart, reports* that four horses belonging to a miller, after manifesting a certain degree of muscular weakness, were attacked by paraplegia. Pulse, temperature, and respiration were normal, and the appetite was preserved; but soon dysphagia was added to the other symptoms. On the third day one of them, a mare, died, and the other three constantly maintained a lateral decubitus; when the head was lifted up and let go it fell to the ground like an inert mass. There was no disturbance of the cerebral functions. The urine was the colour of beer, and the fæcal pellets were dry and dark-coloured. Shortly before the animals died, the heart's beat became tumultuous, while the feeble pulse did not number more than from 50 to 60 beats.

The autopsy revealed: non-coagulated dark blood; some traces of slight intestinal irritation; the mucous membrane of the small intestine had the appearance of an eel's skin, covered with a blackish mucus; the lungs showed signs of venous hyperæmia; in the nerve centres was only noted an effusion of turbid serum and a marked injection of the arachnoid. After a most minute investigation, Vogel discovered a mass of spores of *Tilletia caries*, and taleutospores of the *Puccinia graminis* on the balls of wheat and barley on which the horses had been fed.

4. Varnell relates the following fact.† Five horses died in

* "Repertorium der Thierheilkunde," 1879.

† *The Veterinarian*, vol. xxxv., February, 1862.

a few days, after showing all the symptoms of paralysis. Suspecting the oats to be the cause, the owner placed an old mare in the London Veterinary College, where it was fed with the same grain. The first day it received one portion, and the second, third and fourth day three portions. On the afternoon of the fourth day, the animal was unsteady in its movements, and in the evening there was complete paralysis of the hind quarters. The mucous membranes were pale, the pupils of the eyes dilated, the respiration quickened, but the pulse was only 50 beats per minute. The tongue was paralysed to such a degree that it hung out of the mouth. The animal succumbed two days afterwards.

The oats were infested with fungi of the mucor and aspergillus species.

(To be continued.)

AN IMPROVED VETERINARY VAGINAL DOUCHE AND IRRIGATION APPARATUS.

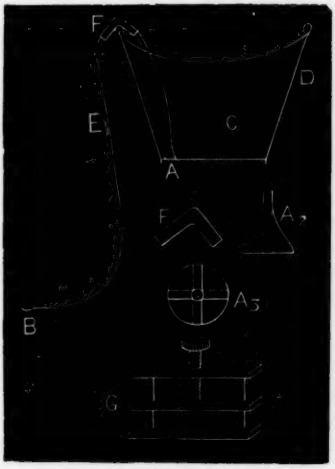
BY J. A. NUNN, D.S.O., F.R.C.V.S., PRINCIPAL OF THE LAHORE VETERINARY COLLEGE, INDIA.

THE following modification of Rasch's vaginal douche has lately been introduced into the hospital of the Lahore Veterinary College, as a substitute for the wound syringe and for irrigation purposes, and has been found to answer successfully in practice. It simply consists of an india-rubber tube with a weight at one end A, and a nozzle at the other B. The nozzle can be conveniently made from that supplied with the common india-rubber enema pump used for mankind; or one can be made from an equine male catheter by cutting a few inches off it. The tube may be made of any length required, and the weight A can be of lead, iron, or any other metal. This weight is conical in shape, and perforated as at A2, from its apex to the base, where it has four cross channels cut, as shown at A3, to allow the water to flow when the weight is standing upright. This weight can be dispensed with, however, if an inch or two of hard tubing is inserted into the end of the india-rubber to keep it open, and a stone tied round it to sink it; this answers quite as well as the grooved weight.

The weighted end of the tube is placed in the bucket or vessel the fluid is in; then a foot or two is paid out in the dotted line C, and allowed to remain a few minutes, so as to permit the water rising in the slack. The tube is now grasped below the water-line D, and drawn over the edge of the

vessel to E, thus converting it into a syphon, when the fluid will flow out at B until the vessel is empty.

The tube is sometimes liable to be compressed by the drag on it where it hangs over the bucket's edge; but this can be obviated by tying it to the bucket handle, or by having it in two lengths, connected by a piece of angle tubing of glass or metal, shown at F, to catch the margin of the vessel.



In the college hospital, bent glass tubing is employed, but metal would answer equally well, and not be liable to break.

The flow through the syphon can be regulated by the pressure of the fingers; but, if desired, a small screw-clamp G, such as can be obtained at any instrument-makers, may be used.

The weight and the arm F, if of metal, can be painted with Aspinall's enamel-paint, which effectually prevents rust.

The advantages of this apparatus over the ordinary wound-syringe are: Cleanliness, there being no packing of pistons to collect dirt; a steady flow, that can be regulated as desired and continued for any length of time; portability, the whole apparatus being readily coiled up and carried in the pocket; and, lastly, cheapness.

I have found that if the bucket holding the fluid is tied a few feet up to the steps of a ladder against a wall, a sufficiently powerful stream of fluid to penetrate any ordinary wound is ensured. For irrigation with antiseptics it does away with all danger to the person, who, in using the ordinary syphon, has to suck with his mouth in order to create a vacuum in the tube.

ECHINACEA ANGUSTIFOLIA.

BY J. M. GOSS, A.M., M.D., MARIETTA, GEORGIA, U.S.A.

I AM frequently asked about this new remedy, that is, where it can be had, and what are its medicinal properties? It grows in Nebraska, near Pawnee City, and in other western States. The *Echinacea atrorubius* grows in Georgia and Florida, and Darby says, the *Echinacea angustifolia* grows in Alabama also.

Medical Properties.

As an antiseptic this root is one of our most valuable. I have used it in many cases of Syphilis, but not alone; as parties have not been willing to risk it alone. But the disease seemed to yield to ordinary anti-syphilitics much sooner when united with Echinacea than when it is left out. It is a valuable remedy in ulceration of any part, locally applied, weakened with water, and also given internally, 30 drops every three hours. Thus given, it quickly heals old ulcers of the limbs, unless there is varicosis. It is a rare remedy in Cholera infantum and Cholera morbus, combined with the compound syrup of rhubarb, in doses of 10 drops. It is a remedy for rhux poisoning, and also for healing up pus-cavities or abscesses in any part, if properly weakened before using locally. I predict that it will be found a potent remedy in diphtheria. I hope someone will try it in some mild cases, where there is no danger in waiting 12 or 24 hours to test it.

It seems to be well adapted to cases of depraved conditions of blood. The tincture, made from the fresh root, just covered with alcohol, proves a valuable antiseptic and antizymotic in typhus and typhoid fever, and, some writers say, is a positive remedy in malarial fever. It powerfully opposes the gangrenous and septic tendency in any disease. It is also very efficient in cases of sloughing in erysipelas, acting not only as an antiseptic, but also as a restorative to the decomposing tissue. Dr. Myer, from whom I procured this valuable remedy, assured me that it will check remittent, intermittent and congestive fever, and he says it greatly aids in the treatment of typhoid fever, measles, small-pox, ulcerated sore throat, boils and carbuncles. It seems to oppose all septic and suppurative diseases. It is a superior remedy for stings of insects. Dr. Myer wrote to me, stating that he had treated many cases of serpent bites, which yielded to the Echinacea in a few hours. He also stated that he believed it would prove valuable in preventing and curing hydrophobia. I

procured a few pounds from him and tinctured it, one pound to the pint of alcohol. It was not long before a rabid dog passed through Marietta (my home), and bit a young man through the hand badly, passed through the eastern edge of the town, biting dogs everywhere he met them, and finally bit a young lady through the thigh.

I treated both cases with the tincture of Echinacea, a teaspoonful three times a day. The young man had no symptoms of hydrophobia; the young lady suffered from profuse ptyalism for a while, but had no other symptoms of the disease. A short time after that another rabid dog passed through our city and bit a child about six years old, and I treated it with 30 drops of the tincture up to the ninth day, at which time the bite, on the wrist, began again to inflame and discharge a bloody fluid, and the child was feverish and refused to eat. I now doubled the dose of the tincture, and gave him Scutellaria lateriflora (Skullcap), 60 drops every three hours, and the child soon recovered and remains well, which has been some two years or more. Last Spring I was called to see a youth in Cherokee County that had been bitten in twelve places by a large rabid dog belonging to his father. The dog sank his teeth their full length in the arms, shoulders, thighs, knees and face of the youth. I treated the boy with the tincture of Echinacea, and commenced also to give the Scutellaria on the fifth or sixth day to prevent spasms. This youth has never had any sign of hydrophobia. About the time he recovered, a puppy, a few months old, from a slut that was rabid and had killed all the other pups in her bed except this one, which, having no marks of its mother's teeth on it, was given to an old man in the vicinity, was found one morning chasing the chickens about the yard and lot, and finally was seen to bite a large hog, and then the old man's daughter on the naked leg, cutting down the length of its teeth. The hog became rabid in some ten or twelve days, lived a few days, raging, foaming at the mouth, and biting everything in its way, then died with spasms. The girl, some twelve years of age, was brought to me, and I put her on the tincture of Echinacea, and she never has had any symptoms of rabies. Last winter a boy, about ten years old, passing along the road near Marietta, Georgia, was met by a dog with a chain around his neck, and he bit the boy deeply in the leg, tearing the calf badly to the depth of his teeth, then attacked and killed a small dog at the next farmhouse, and was then killed. I treated this case as usual, and the boy is now well and has never been troubled with any symptoms of "rabies." Doctor

Hayes, of Denver, Colorado, reported six cases of a malignant form of diphtheria successfully treated with Echinacea and inhalations of Oil of Eucalyptus evaporated in hot water. Dr. H. T. Webster reports the cure of an apparently hopeless case also, and a case of the tarantula bite.

P.S.—The root of this plant or the fluid extract of it can be procured from Messrs. Parke, Davis & Co., Detroit, Michigan, U.S.A.

TUBERCULOSIS IN A CAMEL.

BY A. GREEN, M.R.C.V.S., DUDLEY.

SEEING in the VETERINARY JOURNAL for June, mention made of a case of tuberculosis in a tiger, reminds me of a case in a camel which it was my good fortune to see. The animal was passing through this town, but having been ill some months and exposed to long walking journeys day after day in our changeable English climate, it succumbed at Dudley, and I was asked to make the *post mortem* examination. It was found to be a well-marked case of tuberculosis, both liver and lungs, as well as the sides of the chest, being covered with tubercles.

A POSSIBLE EXPLANATION OF HEREDITARY AND CONGENITAL ROARING.

BY A. J. HASLAM, F.R.C.V.S., M.B.C.M., ARMY VETERINARY DEPARTMENT, CAWNPORE, INDIA.

THE following interesting and suggestive case of roaring, as recorded by me while stationed at Secunderabad, has, at my request, been kindly forwarded by my successor there.

True Copy, taken from Register and Case-book by Veterinary-Lieutenant Tatam, A.V.D., April 28th, 1893.

Case 186, F. 52.—Brown gelding, northern breed, age 16. Admitted September 16th, 1891. Laryngismus-paralyticus. Cause unknown. Two days ago, while at parade, this horse began to roar in the most distressing manner. The history of the horse has been traced for ten years. The horse was ridden by troop sergt.-majors all through his service, and one and all declare that no difficulty of breathing was ever before experienced by the animal; the present rider declares the same. The horse has been through the Afghan and Burma campaigns. When galloped on a flat field he roared in forty seconds, and did not cease making

a noise until two minutes after, and did not recover his breathing properly for five minutes.

Sept. 18.—Not the slightest change; examination of heart reveals increased second sound. There is no trace of any local congestion or inflammation about the larynx, and no catarrh of any kind. The respiratory sounds—especially inspiration—are heard louder near the larynx than at lower part of neck while the animal is at perfect rest.

Sept. 30.—No improvement; on advice of senior veterinary officer, no treatment adopted.

Oct. 10.—No improvement.

Oct. 14.—Slight improvement, in that the normal breathing was recovered sooner than when seen before after a gallop; the roaring was of not so high a note.

Oct. 23.—Slight improvement still, in that he is not painfully distressed until after galloping for three minutes; he recovered his normal breathing in four minutes and ten seconds. The note produced at the moment of greatest distress was of a lower character than before. No treatment adopted; the effect of rest being watched.

Nov. 5.—No improvement since last examined.

Nov. 25.—The distress has increased, in that after galloping two minutes he was unable to proceed further.

Dec. 14.—Galloped this morning, to find the case was worse than ever. There was an acute shrill note and distress after galloping 35 seconds; the note continued for two minutes afterwards, and normal breathing was not recovered for seven minutes.

Dec. 19.—Recommended to be destroyed.

Dec. 27.—Discharged—destroyed.

Post-mortem made by Veterinary-Captain Morgan and Veterinary-Lieutenant Haslam. A careful dissection of the two inferior laryngeal nerves was made, and nothing which could account for the sudden onset of the disease was found. The left nerve was found tightly pressed between the posterior aorta and trachea, and from that portion upwards to the larynx was much thinner and smaller than the right nerve (about half the size). Between the posterior aorta and the trachea, the left nerve was quite flattened and ribbon-like. The left crico-arytenoideus posticus, arytenoideus lateralis, and arytenoideus were atrophied, paler and smaller than the right muscles. The heart was slightly hypertrophied; there was no degeneration of the aorta walls; the lungs and trachea were normal.

No doubt each beat of the heart caused an increased

pressure on the left nerve against the tracheal rings; but the position of the nerve would appear to have been congenital.

There are cases on record of roarers, the offspring of roarers, being dissected *post-mortem*, and the symptom being shown to be due to left muscular atrophy of the larynx, consequent upon neuropathic causes.

The position of the left recurrent nerve in the above-recorded case was abnormal, being at the side of, instead of below, the trachea, at the place where the nerve passes forwards on the right of the posterior aorta. (This may have been due to altered relative position of the aorta or trachea, rather than the nerve.)

The nerve showed the effect of pressure in its altered shape at the seat of pressure only, and its very perceptible atrophy for the remainder of its course.

The horse's pedigree could not be traced, but the case opens up the following speculations:—Is it possible that the well-known hereditary predisposition to roaring is due to transmitted anatomical variation in the relative course of the left recurrent laryngeal nerve in the chest? In other words, is hereditary roaring due to an abnormal relationship of the left recurrent nerve between the aorta and trachea, and therefore to the effect of pressure which after a time must lead to loss of function? Subsequent roarers, born of parents that were roarers, rarely roar as foals! Is this due to the soft tissues, trachea, aorta, &c., the proportionate growth of all parts of the chest, and to the life of comparative ease which young stock enjoy? Some instances of roaring have been placed on record as being cured by a change of climate or some such reason; can anyone cite such a cure of a case of undoubtedly inherited roaring of one or two years' standing? Such a case could not be due to abnormal anatomy!

The great question, "Are acquired characters hereditary?" now being scientifically discussed in the magazines by the greatest naturalists would, I think, be answered affirmatively by the majority of the veterinary profession. Its bearing on breeding is evident and the evidence of veterinarians on all cases of hereditary transmission of acquired peculiarities, and of predispositions to disease obtained during the life of the parents, would be invaluable.

There are proportionately more roarers among thoroughbred horses than others. Specialisation under domestication (as well as civilisation) tends to alter anatomical relationship. Such breeding for generations, as is done for the sole purpose

of obtaining speed, leads to the organs concerned therein becoming more specialised and liable to anatomical peculiarity.

Why should ponies be less liable to roaring than horses? Is it because they are less specialised? The production of size has been kept nearer the original (for the original palœontological horse was a very small one). Are not ponies nearer to a state of nature than horses are?

Why are Arabs and all Eastern breeds comparatively free from roaring? Because they are Nature's horses.

We must expect selection and "breeding" of horses to bring their evils, though we should try to avoid them more than we do.

In this paper I merely wish to be suggestive, and to more particularly excite a collective investigation into the pathology of roaring. By training we are naturalists and keen observers, and I would ask that we, as far as is consistent with our daily routine, dissect out the left recurrent nerve in the chest of all cases of roarers coming under our opportunities, and send the result for publication.

I have made only two careful dissections of roarers since the case recorded, and found the left recurrent nerve in the same abnormal relative position; likewise in three dissections of non-roarers I found the nerve below the trachea until it had passed the posterior aorta; in none of these five cases could I obtain a history of dam or sire.

If primary or transmitted anatomical variation is *ipso facto* a cause of roaring, it would necessarily mean that non-hereditary roaring is sometimes a congenital disease. The question to solve then is, what proportion of roarers (with or without pedigree) show *post-mortem* an abnormal anatomy?

I assume that the nerve's normal position is below the trachea at the place of passing the posterior aorta, on the authority of Chauveau's anatomy, and the above referred to dissections.

So far as I know, anatomical variation has not before been placed on record as a possible sole cause of roaring. Anatomical peculiarity *plus* a predisposing cause, have, however, been suggested as a cause in young race-horses by Dr. Fleming, at page 122 of his work on "Roaring in Horses;" and at page 129 of the same work, he writes:—"For it must be remembered that the defect may arise from a number of what may be termed remote causes, such as pleurisy, pneumonia, pericarditis, congestion of the lungs or pleura, strangles, &c., without hereditary predisposition being present. Whether such predisposition exists in a horse, we have

no means of ascertaining, except by instituting inquiries into his pedigree; for this tendency, in all probability, consists in transmitted anatomical peculiarities, which form the *causa interna*, and therefore undiscoverable agencies, in the origin of roaring."

HOOF CULTURE FOR THE TREATMENT OF HORSES' LIMBS.

BY WILLIAMSON BRYDEN, VETERINARY SURGEON, BOSTON, U.S.A.

AN important feature of this truly benign method, and one which must appeal to every kindly lover of the horse, is that by assisting splendid Old Nature, somewhat as the farmer or the horticulturist does, when fertilizing or cultivating his plants by pruning, thinning, and scraping the limbs of his fruit trees. In such a physiological, painless way, it is equally within our power to restore perverted structures, to repair and renew the transformed and wasted horny tissues of the locomotive organs of the soliped, and it is the only way by which this can ever be accomplished.

The cruel operations by which it is still thought possible to treat successfully diseases peculiar to the horse's limbs—such as spavins, curbs, splints, navicular disease, stringhalt, and others—are so entirely unphilosophical, so crudely empirical, that they are simply "temporizing expedients," and their endorsement by our text books and by our colleges as orthodox veterinary surgery, is unworthy of the period in which we live, so near the twentieth century.

This subject has never received from veterinarians the study and attention it deserved. The time has now arrived, however, when intelligent owners and breeders of horses, observant, philosophic men, will demand of them a more comprehensive study of one of the grandest and most interesting subjects that could possibly be taken up by gentlemen of refinement, leisure, and means. Their sympathies cannot fail to be aroused, not so much by the losses the breeder has to make from his large percentage of defective animals, as from the sufferings the poor horses have to endure from being allowed to drift into (what usually has been the result) hopeless decrepitude.

In this connection one is led to inquire the reason for this attitude of the veterinarian at a period so far into the nineteenth century. Can it be possible that our predecessors in veterinary surgery sprang from a class so low and brutal that a backward coarseness has ever since attached to the doctorer of horses, whether a trainer or horseman, whether farmer or

veterinarian, mutilations and painful operations having been their only notions of cure or repair?

Our text books, our college professors, and our clinical instructors still teach and recommend nearly the same kind of treatment for pathological conditions of the horse's limbs, as their predecessors of more than 50 years ago. They are still in the same old mysterious rut, and the same old tortures are recommended, as if to drive out some devilish, obnoxious thing; the treatment being generally directed not to a *cause*, but a *result*. If the poor beast has bone spavin, bog spavin, curb, or any other kind of hock lameness, the same old firing-iron and blister is resorted to, and another victim is tortured and sacrificed by burnt, fire, and smoke offerings to the same old patron saint of veterinary science (?), who must have descended from a Fury, *not* from a God.

Such facts connot be contemplated without a degree of humiliation, that causes one to call out, how long! Oh, how long is our poor patient to be subjected to such absurd practices, such devilish treatment?

APOMORPHINE IN VETERINARY PRACTICE.

BY HENRY C. WILKIE, F.R.C.V.S., F.Z., CHATTERIS, CAMBS.

SEEING an article by Veterinary-Captain Nunn on the use of apomorphine in veterinary practice, I should like to say that it has by no means escaped the notice of veterinary surgeons in this country, as it is to my knowledge and by some practitioners as the most effectual emetic for the dog.

I think apomorphine was mentioned when I was at college about ten years ago, as an alkaloid derivable from opium, and as the quickest emetic known; but I am not aware if it was ever made use of in the college practice. The practical use of apomorphine was first made known to me some years ago by a well-known practitioner in the west end of London, who had used it for some considerable time, and since then I have not troubled to use any other emetic for canine patients. I have usually given one-tenth of a grain for medium-sized dogs, by dissolving one grain of the alkaloid in 100 minims of boiled water, and ejecting 10 minims of the solution. I have known vomition to take place within 20 seconds, but it appears to occur invariably within a few minutes, and, as a rule, the dog vomits well once, and soon after goes to sleep.

In those cases of poisoning, in which an emetic is indicated, apomorphine is of the greatest possible benefit, and I think in canine practice, in this country at least, it has become quite a necessity.

INFECTIOUS ABORTION IN MARES.

BY T. J. TURNER, B.A., D.V.S., STATE VETERINARIAN OF MISSOURI.

IN response to a letter from the governor of Missouri, dated May 16, 1892, ordering me to visit the State of Montana, and investigate a troublesome malady then affecting brood mares, especially those owned by one Marcus Daly, of Riverside, Bitter Root Valley, Montana, I immediately started on the mission, and arrived at the Daly ranch on May 24th. An investigation was begun in a few days, which required about four weeks to consummate. The following is my report upon this subject, containing a history of the outbreak, its nature, and salient points pertaining to the proper management of the trouble, should it occur on any farm; also facts ascertained by experimentation, leaving out the more minute details concerning the microbe which are yet to be determined by investigation.

Location of Daly Ranch.—The Daly ranch is situated in the fertile valley of the Bitter Root, in Missoula county, Montana. The grounds are generally high and well drained, the tillable land being in a high state of cultivation. Much money has been expended on the property to make it a first-class breeding establishment. Many thousand (some 30,000) acres are enclosed within its confines. The climate is perfect, and feed first-class, as is also the management. To diverge slightly from the object of this report, I am constrained to say that the location of the ranch, its soil, and the climate of the country have nothing whatever to do with the cause of the malady.

History of the Outbreak.—Infectious abortion (so called) was first manifested on the ranch, according to facts attainable at that place, about the middle of February, 1892.

To preface the subject, it might be well to state that the malady, whatever its nature, was causing the mares to slip their foals, either by abortion or a premature birth. It was first noticed amonst the trotters of the Daly ranch, the renowned mare, "Fannie Witherspoon," being the first to abort. The trouble ran riot through his entire stud of most valuable animals, of both thoroughbreds and trotters. The first few abortions caused but little alarm, the owner thinking they were the result of some accident. This being the case, the mares known to have aborted were not regarded as specially dangerous to those still carrying foal, and were consequently allowed to pasture with them. Later, however,

alarm was taken, but not until too late; for nearly all the mares in foal had been exposed. The abortion continued until the end of May. Before I reached the locality, the mares were constantly, as they aborted, removed from the ranch, and kept isolated for two or three weeks.

The disease was of an enzoötic nature, no animals save those belonging to Mr. Daly being affected. Thus it will be seen that this disease may be comparatively easily controlled, although of an infectious character.

Concomitant with this abortion, a few mares would carry their foals to nearly full term, and then premature births would occur. Several foals lived, and apparently, for a week or ten days, were perfectly healthy, when it would be noticed that the joints of the little fellows were swollen, and there was general dejection.

The possibility that the same cause was in operation in producing the two maladies, at once presented itself for consideration. Upon this general supposition, the investigation in regard to abortion was made. The result will be seen in a history of the experiments.

Etiology.—At first, the trouble was supposed to be caused by the food which the animals received. Investigations were made, but no agents likely to cause abortion were found. These investigations were made by botanists and men thoroughly capable of doing such work. They were employed by Mr. Daly, who has been extremely anxious to fathom the trouble, and has used all available means to do the same. He has spared no expense, and too much credit cannot be given him for his kindly and generous aid to science in fathoming the cause of this malady.

Prior to this, however, it was supposed that the animals might be aborting from sympathy; then it was that those which had aborted were immediately separated from the mares in foal. Mares and cows frequently abort through sympathy, it seems, and no infection exists. Upon arrival, and prior to it, indeed,* infectious abortion was suspected, and the investigation was begun with that idea in mind. Having arrived late in the foaling season, few mares were left to foal. This, however, was not a great disadvantage, for a few days after arrival, a sorrel mare, Biddy Mac, running on a mountain

* Dr. Halloway, State Veterinarian, had secured the services of Dr. Paul Paquin for Mr. Daly, and they had made researches which led them to conclude that it was infectious abortion. Later Dr. Paul Evans was secured to continue the investigation begun by the former. His work, not yet published, conforms to the views of Paquin and Halloway.

range, gave birth to a foal, which, as far as external appearances were concerned, was perfectly healthy, except that it was extremely weak. Being very young, however, no trouble was anticipated from this cause. In all these cases the fœtal membranes were always abnormal in appearance.

Appearance of Membranes when Found.—The membranes of this particular case, when found in the morning after the labour (upon a hill-top), and a close and minute examination made, revealed the following facts: That portion of the membranes accompanying the horns of the uterus, was found to be undergoing decomposition, having a deep red, congested appearance, this followed by a leaden greyish colour later, and exhaling a very sanious odour. Small patches of the membranes were entirely destroyed, and small quantities of a muco-purulent matter were to be found. From these membranes, septic material was obtained for future use for experimental purposes. The method will be found hereafter in "History of Experiment and Result so far as Ascertained," the direct operating cause being a microscopical parasite, with its classification not yet definitely determined; the life-history of the parasite and its habits, are yet also to be determined.

Symptoms.—In this trouble—infectious abortion—no symptoms save those premonitory signs—as a possible uneasiness noticed in simple abortion—are noticed, and most frequently nothing at all is to be seen. However, in the joint affection, due to the same organism which caused abortion, as shown by investigation hereafter noted, affecting the foal which lived, the following symptoms were noticed: About a week or ten days after the birth of the foal, there was a swollen condition of some of the joints of the limbs. These increased in size, and became very painful. They often ruptured, and a muco-purulent discharge escaped. Usually, however, there was no rupture, but a continuous distension of the synovial sac. Upon manipulation, these swellings were found very tense and hot; the little fellows, with a most dejected look, stood or reclined alternately, moving around very little, on account of the extreme pain caused by any motion whatever. A severe synovitis, at times partaking of a suppurative character, was established, and upon *post mortem* examination the entire epithesis would be found denuded of cartilage, so severe had been the suppurative action. The appetite seemed tolerably fair in most cases; yet there was no thriving, the hair looked dead and rough, the animal itself having little life and scarcely any vitality.

Course and Determination.—The mares, after inoculation, abort in about fifteen to twenty days. The foals born alive from inoculated mares invariably die, though some live for two or three months.

Treatment.—Prophylactic.—In regard to the treatment of mares which have aborted, the following measures should be followed :—

1. If the mare aborted in an open paddock or pasture, the fœtus and fœtal membranes should be burned, and the mare taken to a stable or small lot where she can be easily treated.

2. If the mare is removed to a stable, it must be apart from any other stable containing pregnant animals, and must not be on high ground, the urine from which will run into lots, paddock, or field occupied by pregnant animals; if removed to a small lot, the lot must be low or situated in such a place that no pregnant animals will, by drainage, be exposed to the germs causing the trouble.

3. (This third measure is only necessary in mares that have aborted and are not doing well.) The external parts should be thoroughly cleansed with a solution of hydrargyrum bichloride (corrosive sublimate), 1 part to 1,000 parts of water. The tail itself should be thoroughly washed with the same, or if in fly-time, a solution of carbolic acid may be added to the corrosive sublimate, of the strength of one part of acid to 100 parts of water. This having been done, the vagina and uterus should be thorougly cleansed with injections of pure tepid water. After this, use the solution above mentioned for injections per vaginum. Continue these injections once a day for two or three days.

4. The attendant treating mares should thoroughly disinfect his hands, and if possible change his clothing before he goes into the presence of pregnant animals.

5. The mares, after two or three weeks of treatment, may be allowed to the stallion with safety.

6. The foals affected with joint-ill (it being the same disease differently manifested, and capable of producing abortion) should be destroyed, and their carcases burned.

7. If, however, the foal is suffered to live, it should be separated from pregnant animals, before any of the swellings exhibit suppuration or sores.

8. A mare, the dam of a foal suffering from the joint-evil, should undergo the same antiseptic treatment as though she had aborted, providing she is not doing well.

9. Mares that have aborted and done well, should not be

allowed to the stallion sooner than two or three weeks after the accident.

History of Experiment and Result so far as Ascertained.– A few days after arriving at the ranch, June 25, "Biddy Mac," a trotting brood mare, gave birth to a foal. This foal, previously mentioned, was very weak, and died from starvation in two days after its birth. A *post mortem* examination was made, but nothing could be found sufficient to cause death. The udder of the dam was then examined, and no milk found. Cultures were made from the blood and several of the glands of the colt, to see if they might possibly contain any of the germs causing the trouble. It is not intended to give the results in detail, as many of the minute points were only tedious and of no practical value to the general public.

Cultures were made from the diseased fœtal membranes from "Biddy Mac," and inoculation made with them. One bay mare in foal received the inoculation on June 6, and on the following night she foaled. On June 29 the foal showed signs of joint trouble in right knee, and on July 1 the hock joint was as large as a man's head. Thus, from this experiment, almost just begun, we might say, do we produce the disease in a colt that when born was apparently in health, and that, too, after the inoculation had only been introduced a few hours.

Another mare, a dun, inoculated with a culture from the blood of Biddy Mac's colt on the 20th day of June, gave birth to a dead foal. This was an abortion, as evinced by the diseased placenta. Hence we see that from these two inoculations with cultures we have produced both the diseases, abortion and joint trouble. The germs causing these two diseases are the same, as shown under the microscope. That these two maladies are one and the same disease, but differently manifested, there is no doubt.

Other and more varied experiments were tried, and are still in progress, concerning other matters with reference to the possible nature of the malady in regard to immunity and length of incubation after natural exposure. The investigation on these lines is not yet consummated, and much time and attentive work must be done ere the public receive any further statements.

From the foregoing it will be seen that antiseptic measures in the way of washes, etc., in treating mares that have aborted, are not sufficient, and are perhaps of doubtful benefit, the germ causing the malady being in the system and not a local parasite; that strict sanitary measures are

necessary; that medicinal treatment, of whatever nature, will be of no benefit so far as removing the cause or preventing the accident is concerned; that joint-evil and abortion are the same malady differently manifested; that local applications to the umbilicus of a recently-born foal whose dam has been infected previously to foaling, will not prevent the occurrence of joint-evil in colts.

The following facts may be determined by experimentation:—

Whether one attack gives immunity to another the succeeding year; whether we will or will not be able to vaccinate against its appearance; what is the length of time required for incubation under natural or accidental exposure; whether or not the germ is capable of producing abortion save at certain stages in its life; and what is the length of time during which the germ remains in the animal economy.

Editorial.

BOVINE CONTAGIOUS PLEURO-PNEUMONIA.

WHEN the history of bovine ccontagious pleuro-pneumonia in this country comes tc be dealt with by the veterinary-medical historian, he will find matter for serious consideration in the records of the last few years of its existence among our herds. That it has been nearly, if not altogether suppressed will be a noteworthy fact, in view of the statements made from time to time that the disease had become naturalised in this climate, and that we must make up our minds to have it always, as attempts to get rid of it would be futile. These statements have been shown to be baseless, and experience has demonstrated that this disorder, like all others which owe their origin, maintenance and extension to a *contagium vivum*, can be eradicated when proper measures, based on the life history of the disease, are devised and carried energetically into execution. What the historian will have to consider and review more particularly, will be the questions which have arisen in recent years with regard to the pathological anatomy and diagnosis of the scourge. The diversity of opinion at present prevailing among veterinary authorities with respect to these points has attracted much public attention, and given rise to comments not very flattering to veterinary science, while it has caused some disagreeable international and colonial manifestations, in so far as our cattle traffic beyond seas is concerned. Not only this, but it has imported into our legislative chambers an amount of inquiry and remark very unusual with animal diseases, as is evidenced on perusing the Parliamentary intelligence. Our cattle trade with the United States and Canada has been seriously compromised owing to this divergence of views as to the pathological anatomy of the malady; and with regard to the latter country, we are assured that, though cattle therefrom have been condemned as diseased on arrival here, contagious pleuro-pneumonia does not exist in any part of it. This assertion has been made by the highest veterinary authorities in Canada, only after the most careful and exhaustive inquiry throughout the Dominion; and we must remember that this is an affection which soon declares itself among cattle, in an unmistakable manner, and is not easily concealed. It is the same with the United States, whose cattle have been repeatedly condemned and slaughtered on arrival at our ports,

though investigation by the veterinarians there, at the sources whence the animals were drawn, has failed to discover any trace of the malady. Not only this, but our own veterinary authorities are in conflict as to whether the imported cattle condemned and slaughtered because supposed to be infected, were suffering from contagious pleuro-pneumonia at all. The gravest doubts are now entertained as to whether mistakes have not been made; and reviewing the facts connected with these occurrences, there is certainly good grounds for reasonable doubt. We are often told that pathological anatomy has made wonderful strides within the last few years, and undoubtedly it has; but if this be admitted we have surely the right to inquire why there should now be any difficulty in deciding upon the character of the lesions of a disease which has been among our herds for half a century, and has made its presence so painfully felt by our agriculture.

Complaint must certainly be made that all the resources of science have not been invoked in the endeavour to decide whether, in debatable cases, the disease was present in a certain animal or animals, and that macroscopical or microscopical appearances were alone relied upon to arrive at a conclusion; and regret must be strongly expressed that the virus of the disorder has not been utilised in furnishing evidence. Surely inoculation of a young bovine, with the fresh exudate from the diseased lungs of the suspected animal might have been practised as a test! It is well known that such inoculation produces specific and unmistakable effects within a brief and fixed period, and that the resulting lesions are markedly characteristic of the disease. No such results would be obtained were the disorder of a non-specific nature, say simple broncho-pneumonia, which, as some veterinary authorities assert, has been mistaken for Contagious Pleuro-pneumonia. It is impossible to understand why this easily-performed, and almost always certain test, was not applied in every instance of discovery of disease among the cattle imported from the American continent.

Professor Arloing, the distinguished Director of the Lyons Veterinary School, has within the past few months introduced an extract from the lung exudate, to which he has given the name of *Pneumo-bacillin*, and which, from the trials already made with it, gives promise of being as reliable and useful as Mallein is with regard to glanders. It gives rise to both local and general effects when inoculated into cattle which are affected with the disease, no matter how slight, nor whether chronic or recent. We shall refer to Arloing's dis-

covery and experiments in next month's JOURNAL, our earnest desire in the meantime being to see something tangible done to clear away a state of uncertainty with regard to the signs and lesions of contagious Pleuro-pneumonia, which has for some time excited the public, as well as the professional mind, and has become something of a scandal, so far as veterinary pathology is concerned.

ON THE SPECIAL LESIONS IN PULMONARY GLANDERS OF THE HORSE.

IN a previous issue of the VETERINARY JOURNAL, we gave a notice of a paper on the histogenesis of Chronic Glanders, by Professors Leclainche and Montane, of the Toulouse Veterinary School, which paper had been read before the Paris Society of Biology in January last. Before the same Society, in February, another paper dealing with the special lesions of pulmonary glanders in the horse was presented by the above authorities, and it is so interesting and deserving of attention that as already promised when dealing with the other paper, we give a summary of its more important details.

The authors remark that the tuberculous neoformation, of which they had in their previous remarks sketched the evolution, does not constitute the only form of pulmonary lesions that may be observed in chronic glanders; for other types are also met with, which owe their special characters either to their anatomical location or their mode of development.

I.—In chronic glanders the interlobular channels in the neighbourhood of the tubercles are found to be infiltrated by very numerous leucocytes, which causes them to present a reticulated aspect at certain points. At some points also the migratory cells are accumulated in little round islets situated in the separated connective tissue. The highly-coloured cellular elements are imprisoned in a fine reticulum, which gives the whole the appearance of a closed follicle.

These clusters of leucocytes may also be found agglomerated and so constitute by their reunion a particular and very interesting form. When slightly magnified, we can distinguish beneath the pleura a rounded mass composed of ten to fifteen islets crowded with leucocytes, and separated by partitions of nucleated connective tissue, the aspect of the whole recalling to mind the appearance of a lymphatic gland. The lesion is developed on the course of an interlobular septum, at a little distance from its junction with the pleura. This septum can be distinctly seen dividing into two fasciculi which separate to include the neoformation; one of these, pushed towards the pleura, becomes confounded with it, while the other separates the formation from the peripheral pulmonary tissue, which remains normal. The nearest alveoli are compressed and flattened, and appear as narrow and irregular slits.

When more highly magnified, the pleura and the portion of the interlobular septum connected with it, is seen to be infiltrated with leucocytes. The partitions between the islets are formed by a greatly reticulated tissue, enclosing numerous vessels, some of which present an embryonic form. The islets or follicles are constituted by an accumulation of leucocytes, provided with a single voluminous nucleus, and by a fine granular reticulum. The islets occupying the centre of the lesion contain elements which have undergone a certain degree of vitreous or waxy degeneration.

All these characters histologically simulate *lymphadenoma*, and yet the

specific nature of the alterations is evident. The lesion is already outlined in the connective tissue septa which, opened out by the infiltrated leucocytes, assume the reticulated appearance; it is still more delineated by the accumulation of leucocytes in mass in this opened-out tissue; and, lastly, a final phase is marked by the confluence of the follicles.

In the invaded interlobular septa, as also in the interfollicular partitions, there is, in addition, an abundance of glander bacilli, and if the intense colour of the leucocytes in the centre of the islets renders their discovery difficult, they are readily seen at the periphery, in the vicinity of the partitions. The pseudo-tubercles thus developed, have a somewhat peculiar aspect. On the surface of the lung, they appear as a regularly round, well-defined patch, which is translucid, and slightly yellow, rose-coloured or opaque; its surface is slightly opaque, and the neighbouring parenchyma is in no way altered. On section, the tissue is found to be of a fleshy consistency, very finely granular, and perfectly homogeneous throughout, at least, during the earlier periods of evolution.

These forms appear to exist in numerous cases of equine glanders, but the authors had only met with them in very small number in the same animal. In the first horse whose organs they had examined, and which had given a strong reaction to mallein, only two foci of this kind were found, there being no other lesions in the lungs or in the mucous membranes. A second case was furnished them by the examination of a fragment of lung from a horse that had also been killed after being tested with mallein; and a third was found in a lung presenting very many glander tubercles of different ages—a single nodule offering the characters indicated, these being so distinct that the histological form of the lesion could be immediately predicted.

II.—Sometimes a very different type of alteration was encountered. This was constituted by a diffused focus of alveolar pneumonia extending over the greater portion of a sub-pleural lobule. The lesion was developed in the angle formed by the pleura and an interlobular septum, sometimes in the sub-pleural parts adjacent to two lobules. The pleura and septum were thickened and infiltrated with leucocytes, which had also penetrated the alveolar walls. The alveoli were themselves filled with a fibrinous exudate, and by an intense accumulation of leucocytes undergoing degeneration. The portion of lobule invaded in this way resembled a rounded cluster of grapes, limited by a narrow zone of catarrhal pneumonia. In the remainder of the lobule, and principally in the vicinity of the focus, the vessels were gorged with blood, and there were disseminated hæmorrhages in the alveoli. These lesions were an exact reproduction of those observed in acute glanders, differing only in their more limited localisation.

Throughout the focus there were found very many bacilli, these being more especially abundant in the alveolar contents, and they were also observed to be disseminated in the whole of the hæmorrhagic zone.

These lesions were discovered in an animal which did not exhibit any symptoms of the acute disease. There were about twenty somewhat limited foci disseminated in the two lungs; each of these was indicated on the pleura by a yellowish spot with an irregular contour, three to four millimetres in diameter, and surrounded by a very marked zone of congestion. On section the surface was observed to be white, uniform, and granular, with an irregular outline, and limited by a congested tissue. The focus represents in shape a cone with its base sub-pleural, its aspect being not unlike that of the infarctus of purulent infection.

The authors sum up the results of their observations in the following terms:—

1. (*a.*) In the horse's lungs the lesions of glanders may assume a form simulating lymphadenoma;

(*b.*) This form is due to the development of agminated lymphoïd foci in the interlobular septa;

2. (*a.*) An exceptional alteration is constituted by the evolution of a centre of alveolar pneumonia, surrounded by a hæmorrhagic zone;

(*b.*) This form belongs, clinically, to chronic glanders, and is constituted anatomically by a very limited focus or centre of acute glanders.

THE DANGER OF MEAT FROM TUBERCULOUS CATTLE.

It is only necessary to read the medical journals and public press to see the great diversity of opinion that exists in the minds of the medical profession, scientists, and the public at large, concerning the danger that is incurred by the use of the flesh of animals suffering from tuberculosis. From the reports presented to the Congress of Tuberculosis in Paris, and from more recent investigations by Arloing, who has been experimenting in the inoculation of meat juice of tuberculous animals, the majority of physicians have arrived at the conclusion that the flesh of possibly one sixth of these animals is capable of causing phthisis. Various experimentalists, including Nocard, have by their work demonstrated the same fact. On the other hand, Perroncito *(Centralblatt für Bakteriologie, XI., page 429)* has always defended the opinion that there was little danger in the use of such meat, and cited in argument the negative results of his own experiments. He has recently made new experiments on the subject, with meat from animals which had been isolated because they were suffering from tuberculosis with advanced lesions.

More than 200 rabbits and as many guinea-pigs were inoculated under the skin, or in the peritoneum, with meat juice from tuberculous subjects. None of these animals, killed after eleven months, presented any sign of tuberculosis. Two oxen inoculated under the skin with beef juice remained immune. Four six-months pigs of Italian breed, nourished four months on tuberculous meat, presented at the autopsy no tubercles. Twelve others, two months old, nourished five months the same way, also escaped. Two young Yorkshires, nourished in the same fashion, failed of infection in three months. These animals were fed later on with intestines of cattle containing tubercles, all with impunity.

With these results of Perroncito before us, it should never be forgotten, however, that the other experimentalists mentioned above, equally as exact and equally learned, together with daily observations as mentioned above, have reached results just opposite, which do now, and always will have their value. The question at this time is one which must be considered in the light of danger; for we must remember that if some experiments with vaccination give negative results, as many can be found which give positive results, and constitute as many indications of positive danger. Furthermore, it should not be argued for a moment that diseased meat should form a portion of our diet, even though it were non-infectious.—*Modern Medicine.*

RABIES IN SOUTH AFRICA.

In our last issue we mentioned that rabies had appeared in Central South Africa, and now it seems, it has manifested itself in a rather alarming manner on the seaboard, at the important town of Port Elizabeth. A local paper, under date of April 29th, alludes to it as follows:—"With reference to the hydrophobia scare, we are pleased to state that there have been no further serious developments of the disease in our midst. All the dogs known to

have been bitten are secured, and in the event of any one of them displaying symptoms of madness it will be at once killed, and the body taken to Grahamstown to enable Professor Edington, the Colonial Bacteriologist, to make an investigation. Mr. Britton, the veterinary surgeon, entertains the theory that the affected dogs had contracted rabies, but in a modified form. The cases which came under his notice were identical with the disease known in Europe, but were less virulent. All precautions are being taken to prevent danger to the public, but it is hoped that owners of dogs will at once report any serious symptoms which may present themselves amongst their animals. We may mention that investigations go to prove that the disease—whatever it may be—has been in our midst for some time. About three months ago two dogs belonging to Mr. Webber, at the Drift Sands, became violent, and had to be destroyed, and other cases are reported to have occurred during the interval. Some weeks ago a dog belonging to Dr. Uppleby showed signs of madness, and the doctor, not liking the look of things, very wisely administered a dose of poison immediately. If the disease is not a mild form of rabies, it is evident that it is something almost equally distressing to the dogs attacked, and no steps should be left untaken to stamp it out. The local authorities are fully alive to the danger, and may be relied on to do all that can reasonably be expected from them in the interests of the public."

Another paper, a week later, states that from what had transpired within the previous two days, there was very little reason to doubt that the disease among dogs was rabies, Mr. Hutcheon, colonial veterinary surgeon, as well as Mr. Britton, being convinced that it could be nothing else. Several cases are alluded to, in which the symptoms the affected dogs presented were those of this disease. Certain precautions had been adopted but a report from Dr. Edington was anxiously looked for. Nothing is said as to the procedure the doctor proposed to follow in proving whether the malady was rabies, but it is to be hoped he resorted to the ready and always speedy and reliable test introduced by M. Pasteur, viz., intra-cranial (sub-dural) inoculation with the medulla oblongata of the suspected dog. Rabbits can be employed as test animals, and only a small portion of the medulla is necessary; this may be rubbed up in a little distilled water and injected beneath the dura mater by means of a Pravaz syringe.

FOOT-AND-MOUTH DISEASE IN THE TRANSVAAL.

Mr. P. J. Joubert, of Elandsfontein, Colesberg, reported, on May 18th, that he has just returned from a visit to the Wakkerstroom District of the Transvaal, where, during the month of April, he met with foot-and-mouth disease in the most virulent form that he has ever experienced. The veldt was in excellent order; the grass standing about a foot high, but animals were dying in every direction, unable to feed or to move about. The mortality amongst both large and small stock he reports as being very large, more especially in the latter. As a large cattle and sheep farmer, he strongly supports the action of the Government in maintaining the line of quarantine along the Orange River, and expresses great fears as to the consequences of any invasion by the disease to the wool-growing districts.

He, himself, was a heavy loser of sheep and lambs during the outbreak of a somewhat similar disease many years ago; but the form in which he recently witnessed it in the Transvaal exceeds anything that he has known before, for severity and its effect upon the stock affected. He feels very strongly that every effort should be made to keep it out of the wool-growing districts, especially during the winter months.

Army Veterinary Department.

Gazette, May 30th.

Vet.-Major W. Walker is placed on temporary half-pay on account of ill-health.

Gazette, June 13th.

The following Vet.-Captains to be Vet.-Majors :—J. Burton, S. Longhurst, F. F. Crawford.

Gazette, June 23rd.

The following gentlemen to be Veterinary-Lieutenants on augmentation : H. T. Sawyer, J. Farmer, A. Smith, G. M Williams, A. E. Clarke, W. N. Wright, H. C. Harris; W. A. McDougall, in succesSsion to Vet.-Major W. Walker, placed on temporary half-pay.

Vet.-Colonel J. D. Lambert, C.B., Director-General, Army Veterinary Department, was one of the guests at the Dinner given by the Secretary of State for War, in honour of her Majesty's birthday.

At the Levée held at St. James's Palace on May 29th, by his Royal Highness, the Prince of Wales, the following presentations of veterinary officers were made :—Veterinary-Major G. D. Whitfield, Army Veterinary Department, by General H.R.H. the Duke of Connaught ; Veterinary-Surgeon D. M. Storrar, 1st Monmouthshire Artillery Volunteers, by his Grace the Duke of Beaufort ; Veterinary-Surgeon Jarvis, Middlesex Yeomanry Cavalry, by Lieut.-Colonel Mitford.

In the usual list of Birthday Honours which was published in the Gazette of June 2nd, we are pleased to note that the Companionship of the Order of the Indian Empire was conferred upon Veterinary-Lieutenant-Colonel James Herbert Brockencote Hallen, F.R.C.S., Inspector-General of the Civil Veterinary Department in India. This is the first time this decoration has been conferred upon a veterinary-officer, though several have well deserved it since the Order was instituted, notably the present recipient, who had earned it years ago. However, better late than never at all, and we heartily congratulate Vet.-Lieut.-Colonel Hallen on obtaining this recognition of his meritorious services to the Indian Empire.

The annual dinner of the Army Veterinary Department was held at the Holborn Restaurant on June 16th, and the following officers were present :—Veterinary-Colonel J. D. Lambert, C.B., Director-General ; Veterinary-Lieut.-Colonels G. A. Oliphant, W. B. Walters, F. Duck ; Veterinary-Majors J. Kettle, J. Reilly, J. Hammond, B. L. Glover, J. W. Evans, I. Matthews, G. D. Whitfield, J. Burton, S. Longhurst, F. F. Crawford ; Veterinary-Captains F. Flintoff, J. D. Edwards T. A. Killick, F. Raymond, J. T. Dibben, C. Rutherford, K. Lees, G. R. Griffith ; Veterinary-Lieutenants A. F. Appleton, F. Joslen, T. Marriott, E. R. C. Butler, E. Taylor, E. J. Lawson, F. C. Stratton, E. E. Martin, C. B. Freeman ; A. A. Jones, Esq., and W. Pallin, Esq.

Vet.-Captain G. R. Griffith, Principal Veterinary Officer, Egyptian Army, has been granted four months' leave to England.

Vet.-Captain E. E. Bennett has been granted two months' leave from Egypt to England.

Vet.-Lieutenant E. Taylor has been granted six months' leave to England from India. Vet.-Lieutenant A. England embarks on June 6th for a tour of service in South Africa, relieving Vet.-Lieutenant R. W. Raymond. Vet.-Lieutenant L. J. Blenkinsop has been posted for duty to the 10th Hussars, *vice* Vet.-Lieutenant E. E. Martin, transferred to Woolwich.

Obituary.

The following deaths have been reported:—

J. B. Patterson, F.R.C.V.S., Dumfries, who graduated in 1840.
J. Ingham, M.R.C.V.S., Rochdale, „ „ „ 1879.
F. H. R. Banbury, M.R.C.V.S., London, „ „ „ 1890.

Parliamentary Intelligence.

HOUSE OF COMMONS, June 1st.

THE TUBERCULOSIS COMMISSION.

In answer to Mr. FIELD,

Mr. H. FOWLER said,—The report of the Tuberculosis Commission has not yet been issued, and I must remind the hon. member that in my reply to his question on March 17th last, I stated that I was informed that it was expected that the microscopical investigations, which were being made on behalf of the Commission, would be completed, and the reports of the three sub-inquirers be in the hands of the Commission before the end of the present month; that the deliberations of the Commission thereon would follow; and that their report would be presented as soon as possible afterwards. The Government are not prepared to make proposals to Parliament until the report of the Commission is presented.

Mr. FIELD: When may the report be expected?

Mr. H. FOWLER: If the Local Government Board were the Commission, I should be able to fix it.

In reply to a further question by Mr. W. REDMOND,

Mr. H. FOWLER stated that he had asked the Commissioners over and over again, and that their answer was that they would report when they had completed their inquiries.

Mr. FIELD: Is there no way in which this Commission can be compelled to do its duty?

CATTLE DISEASE.

Mr. CHAPLIN asked the President of the Board of Agriculture whether it was true that there had recently been a serious outbreak of pleuro-pneumonia at Hendon, in the metropolitan district; and how long a period had elapsed since the last outbreak of the disease in that district.

Mr. GARDNER: Yes; I regret to say that it is the case that a somewhat serious outbreak of pleuro-pneumonia has been reported from Hendon, ten animals on a dairy farm there having been found to be affected with the disease. The cattle in contact have been slaughtered, and the usual precautions taken, and we are making careful inquiry with a view to discovering the source of infection. No previous case of pleuro-pneumonia had been reported in the Metropolitan Police District since October 1st last.

In answer to a further question by Mr. CHAPLIN,

Mr. GARDNER said the arrangements made for the examination of the lungs of Canadian cattle, landed in Great Britain, are embodied in an Order made by the Board of Agriculture on the 17th ult., a copy of which I shall be happy to supply to the right hon. gentleman. The Order is being carried out by the inspectors at the various ports where the cattle are landed, with the assistance of a staff of Commissionaires specially engaged for the purpose. I may add that the Order was published in the *London Gazette* of the 18th ult., and that the usual steps were taken to give publicity to its provisions, in accordance with the undertaking I gave to my hon. friend, the member for Dundee.

Mr. CHAPLIN: Will it be convenient to the right hon. gentleman to say

what have been the results of that inquiry up to the present time, and whether they point to the sanitary condition of cattle in Canada, or whether they confirm the continued existence of pleuro-pneumonia in that country?

June 2nd.

PLEURO-PNEUMONIA AT HENDON.

Mr. W. FIELD asked the President of the Board of Agriculture whether, in view of the recent outbreak of pleuro-pneumonia at Hendon, it was the intention of the Government to institute a series of scientific experiments to test the efficacy of inoculation as a preventive of pleuro-pneumonia, as the system was generally practised in Australia and other colonies with good results.

Mr. GARDNER: I am afraid I can only refer my hon. friend to the replies which have been given to the previous questions which he has addressed to my predecessor and myself on this subject. A very careful examination of the system of inoculation, as practised in the colonies, was instituted by the Departmental Committee of 1888, and I see no reason to think that the result of any further experiments would be commensurate with the labour and expense involved.

THE HEALTH OF CANADIAN CATTLE.

Mr. CHAPLIN asked the President of the Board of Agriculture whether he could state what had been the results up till now of the systematic examination of the lungs of Canadian cattle, which was now being made under the direction of the Board; and whether they appeared to show at present that Canada was free from the disease, or whether the examination had disclosed any case or cases of pleuro-pneumonia, or of suspected pleuro-pneumonia, for which cattle would be slaughtered by the Board in England.

Mr. GARDNER: Up to the end of last week, ten cargoes, comprising 5,119 head of cattle, had arrived in this country from Canada. The result of the special examination, to which the lungs were subjected, has proved satisfactory, except in the case of an animal landed from the steamship Lake Winnipeg, in regard to which I am awaiting certain further information from my professional advisers, which will not be available for some few days to come. Perhaps the right hon. gentleman would then renew his inquiry.

Mr. CHAPLIN: Am I to understand that there is only one suspected case?

Mr. GARDNER: Only one.

June 5th.

SWINE FEVER.

Mr. FELLOWES asked the President of the Board of Agriculture whether, in view of the fact that the evidence given before the committee on Swine Fever had been published by the Board of Agriculture, he was now able to say whether he intended to give effect to the recommendations of that committee.

Mr. CHANNING asked a question on the same subject.

Mr. GARDNER: I am in communication with the Treasury with regard to the recommendations of the departmental committee, and at present I can only refer the hon. member and my hon. friend the member for Northamptonshire, who has also placed a question on this subject on the paper, to the statement made on behalf of the Government immediately before the recess. I may perhaps add, however, that although, as was pointed out on that occasion, I am personally anxious to take the disease in hand, an immediate decision on the subject is by no means a matter of such urgency as the frequency of the questions addressed to me with regard to it would suggest. I am informed by my professional advisers that late autumn is the best season for the commencement of operations, and with regard to the extent of the disease, I may say that so far from there having been any recent serious

increase, as my hon. friend states, the available statistics point to exactly the opposite conclusion. The number of outbreaks recorded last year was less than half the number recorded in 1891—in fact, smaller than in any year since 1884, and although it is no doubt true that many outbreaks are unreported, there is absolutely nothing to justify the impression, which seems to be gaining ground, that the owners of pigs are face to face with a crisis of a very serious character.

June 8th.

PLEURO-PNEUMONIA AT HENDON.

Major RASCH asked the President of the Board of Agriculture whether he could give any further information relative to the outbreak of pleuro-pneumonia at Hendon.

Mr. GARDNER: We thought it desirable to slaughter certain cattle belonging to the same owner but stationed in other premises in his occupation, and amongst these another diseased animal has been found. Inquiries as to the history of the diseased animals are still proceeding, but no information has yet been obtained as to the original source of infection.

THE INSPECTION OF CANADIAN CATTLE.

Mr. CHAPLIN asked the President of the Board of Agriculture, in reference to the statement as to the lungs of the Canadian cattle sent to the Board of Agriculture for examination by the inspectors at the ports, how many suspicious cases, apart from the case of the animal landed from the Lake Winnipeg, had been sent up altogether by the inspectors since the examination commenced; at what dates, from what cargoes, and by which of the inspectors were they sent; and were the veterinary authorities of the Department unanimous in their opinion as to the character of the lungs.

Mr. GARDNER: In addition to the case to which the right hon. gentleman refers, the lungs of five animals have been sent up by the veterinary inspectors at the ports for examination, since the special inspection of the lungs of Canadian cattle commenced. In the first case, the animal arrived at Liverpool by the Numidian, and the lungs were sent up on the 9th ult.; in the second, the animal arrived at Deptford by the Brazilian, the lungs being sent up on the 29th ult.; in the third, the animal was landed at Liverpool from the Lake Winnipeg, the lungs being sent up on the 29th ult.; in the fourth, the animal arrived at Deptford by the Storm King, the lungs being forwarded on the 30th ult.; and in the fifth case, the animal arrived by the Lake Superior, the lungs being sent up on the 1st inst. With reference to the concluding inquiry made by the right hon. gentleman, I would observe that in regard to all questions of diagnosis, I necessarily act, as he is aware, upon the advice of the chief officer of the Veterinary Department, but I have no reason to suppose that the opinion of that officer in any of the cases in question, is different from that of his professional assistants.

Mr. CHAPLIN asked whether, if these suspicious cases had occurred in England, the cattle would not have been slaughtered at once.

Mr. GARDNER said he could only repeat that in the opinion of his professional advisers, the examination to which the lungs were subjected, had proved satisfactory, except in the case of the animal landed from the steamship Lake Winnipeg.

June 19th.

SWINE FEVER.

Mr. FELLOWES asked the President of the Board of Agriculture whether he had communicated with the Treasury on the question of swine fever as promised to the deputation on Tuesday last; and whether he was now

prepared to state the intentions of the Government as to taking immediate action in the matter.

Mr. GARDNER: I am still in communication with my colleagues with regard to the subject of swine fever, and it is not as yet possible for me to add anything to what I have recently stated in this House and in reply to the deputation which waited upon me a few days ago. As to the necessity of the immediate action which the hon. member suggests, I would refer him to what I said in reply to the question he put to me on the 5th instant.

Mr. CHAPLIN asked whether the Government intended to deal with the question during the present session.

Mr. GARDNER said the evidence given before the committee had not been circulated a fortnight. There had been no unnecessary delay.

Mr. FELLOWES gave notice that he should take an early opportunity of calling attention to the subject.

June 20th.

SWINE FEVER.

A long discussion was started by Mr. FELLOWES, who insisted that the Government should act at once upon the recommendation of its own committee, and take the suppression of this disease into its own hands, as the local authorities had failed to extinguish it. He was supported by Mr. Chaplin, Sir R. Paget, Mr. Long, and Mr. Heneage.

The CHANCELLOR OF THE EXCHEQUER pleaded that the Government could not spare money to provide compensation to owners for slaughtered animals.

PRECAUTIONS AGAINST RINDERPEST.

Colonel GUNTER asked the President of the Board of Agriculture whether his attention had been called to the intended shipment to this country of hay from Russia, and that as cattle murrain was generally prevalent there, and as the outbreak of rinderpest in England in 1866 was traced to this source, whether he intended to take steps to prevent any chance of a like calamity occurring again.

Mr. EVERSHED, Mr. JEFFREYS, and Sir J. KENNAWAY put questions to a similar effect.

Mr. H. GARDNER: In reply to the various questions which have been placed on the paper on this subject, I may state that on the occasion of each of the three outbreaks of rinderpest which have occurred in this country during the present century the disease followed upon the arrival here of cattle affected with the disorder, and we have no evidence whatever that it has at any time been introduced by means of the importation of hay, straw, or other feeding-stuffs used for cattle. The possibility of infection in the manner suggested in the questions has been under consideration on several occasions in connection with the recent outbreaks of foot-and-mouth disease, but it has always been felt that the risk was not of such a character as to justify the imposition of restrictions seriously affecting a great variety of trades; and, indeed, short of total prohibition, I do not see what steps could be taken which would be really effectual. I fully recognize, however, the importance of the subject, and I will keep it steadily in view.

Colonel GUNTER said the idea prevailed in the country that hay brought this disease just as rags brought cholera, and asked the right hon. gentleman for an assurance that every precaution would be taken.

Mr. GARDNER repeated that he fully recognized the importance of the subject, and would keep it in view. But it was contrary to the fact to assert that rinderpest had ever been brought to this country by imported hay.

Mr. CHAPLIN: Would it be possible to make a distinction between hay

coming from the Russian Steppes and hay coming from other parts of Europe?

Mr. GARDNER: I think it would be very difficult.

THE IMPORTATION OF CANADIAN CATTLE.

Mr. CHAPLIN asked the President of the Board of Agriculture whether he would ascertain, in the cases of the five suspected animals recently landed from Canada from the steamships Numidian, Brazilian, Lake Winnipeg, Storm King, and Lake Superior, whether the veterinary officials of the department were unanimous in the opinion that none of the lungs were affected with pleuro-pneumonia, for which animals have been or would be slaughtered in the ordinary course in England; also whether he could now inform the House what decision had been arrived at in the suspected case of pleuro-pneumonia in a Canadian animal landed from the Lake Winnipeg, and with regard to which he was awaiting further information on June 3.

Mr. GARDNER: The suggestion of the right hon. gentleman appears to me to be open to the objections I stated a few days ago, and I cannot agree to do anything which would appear to lessen the responsibility of my chief professional adviser. I am anxious, however, to place those who are interested in this matter in possession of full information regarding the facts of the case, and I may therefore say that I understand on inquiry that in two of the five cases referred to in the question the indications of disease were such as would have justified the slaughter of the animals, as a matter of precaution, if those indications had been found in home stock. My veterinary advisers, however, consider it desirable that in a matter in which so much depends upon the correct diagnosis of disease the detailed investigation and discussion which were obviously necessary should proceed in a case in which the lesions were clear and unmistakable, and it is to the results obtained in the case of the animal landed from the Lake Winnipeg that I must look for guidance in the matter. With regard to that animal I would say that the preparation of sections for microscopic examination necessarily takes time, inasmuch as the sections have to be dried with great care. I understand, however, that they are now practically ready, and that a full report respecting them will be in my hands in the course of a few days.

Mr. CHAPLIN asked whether it was not very unusual that so long a time should be required to ascertain whether the disease was pleuro-pneumonia or not.

Mr. GARDNER said this was not an ordinary case. It affected the whole of the Canadian cattle trade with this country, and he had thought it his duty to order an exhaustive examination to be made, so that he should be able to arrive at a satisfactory conclusion.

Mr. CHAPLIN: When will the right hon. gentleman be able to put the House in possession of information on the subject?

Mr. GARDNER said the examination of the lungs would be concluded in a short time, and he would then make a statement; but in the meantime he thought premature questions on the subject were unsatisfactory.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

The Examinations in Scotland.

The Written examination was held in Edinburgh and in Glasgow on Monday, May 8th, simultaneously with that held in London. 246 students were examined in Edinburgh, and 59 (one of whom was disqualified) in Glasgow.

The Oral and Practical examinations were held in Glasgow and in Edinburgh, on and between May 15th and 26th, when the following gentlemen in the final sections of these examinations were admitted members of the Royal College of Veterinary Surgeons:—

Glasgow College—

Mr. J. Gillies, Glasgow
" R. Mason, Glasgow—
" H. McConnell, Armagh
" A. McNairn, Newton Stewart
" R. Moore, Nottingham
" J. R. Robins, Alcester
" F. W. Thompson, Formby, Lancashire
" R. Ward, Southport

Dick College—

Mr. V. Banks, Edinburgh
" E. J. Carroll, Milltown Malby, Clare
" R. W. Flannery, Buttevant, Cork
" H. Flood, Longford
" T. J. Foulkes, Edinburgh
" J. J. Griffiths, Limerick
" R. Harris, Moneymore, Derry
" W. Hamilton, Shotts, Lanark
" R. H. Holmes, Tipperary
" J. W. Hopkins, Swansea
" R. Hyde, Portadown, Armagh
" T. Kyffin, Liverpool
" J. Masheter, Lunds, Yorks
" J. McIntosh, Pitlochry
" A. O. O'Neil, Dublin
" A. P. Ord, Darlington
" E. H. Pratt, Leeds
" J. Slidders, Dundee
" J. D. Stewart, Sydney
" W. Stewart, Belfast
" H. W. Squire, York
" A. M. Trotter, Edinburgh
" S. R. Tufts, Castlewellan, Co. Down
" J. J. Vahey, Castlebar, Co. Mayo

New College—

Mr. O. T. Archer, Leicester
" E. W. Anderton, Skipton
" J. R. Bailie, Cupar Fife
" G. W. Balfour, Edinburgh
" H. G. Bowes, Eastwood, Notts
" E. K. Burton, Edinburgh

Mr. A. T. Copeland, Shifnal, Shropshire
" G. Ellis, Skelton
" G. E. Gibson, Darlington
" J. S. Gould, Southampton
" J. Hall, Oldham
" M. Hutchinson, Bridlington
" J. W. Irving, Brisbane
" W. Litt, Keswick
" J. Lyons, Limerick
" G. Senior, Darlington
" J. S. Siddle, Penrith
" W. Sime, Newburn, Fife

The following gentlemen passed their Second Examination :—

GLASGOW COLLEGE—

Mr. W. T. Blane
* " D. Brown
* " T. C. Ferguson
" J. Gorman
" A. Hart
" J. Hill
Mr. J. C. Kyle
* " A. Main
* " H. J. Maxfield
" J. Paterson
* " J. Paton
" M. White

DICK COLLEGE—

Mr. J. Argo
" J. Bigley
" W. T. Bolton
" E. A. Burnside
" F. Featherstonhaugh
* " G. J. Furness
" A. Holburn
" N. Irvine
" J. McArthur
" J. McDonald
" A. McFarlane
" J. McMaster
" L. McLaren
Mr. E. Martin
* " F. C. Mason
" D. Morrison
" S. E. Morton
" J. Neeson
" K. Roberts
* " E. C. Russell
* " W. E. Russell
" T. Scotson
" H. Thompson
" R. S. White
" G. N. Waugh

NEW COLLEGE—

Mr. P. Abson
" D. J. Elias
* " H. B. Elliott
" F. W. Hall
" A. O. Hughes
" W. Hughes
† " W. Jowett
" R. C. Moore
" F. W. Morris
" J. Mulqueen
Mr. W. A. Pallin
" F. Pickering
" E. Segar
" G. R. Simpson
" W. D. Simpson
" J. Spreull
" A. T. Waller
" W. Webster
" J. H. Wright

The following gentlemen passed their First Examination :—

GLASGOW COLLEGE—

Mr. H. H. Carlisle
" W. Cockburn
" J. Eadie
" J. D. Gates
" J. McNeil
* " R. Miller
Mr. R. Mitchell
* " J. Rankine
" W. Roy
" R. K. Rutherford
" J. Stirling
" M. E. White

Marked thus * passed with great credit.
" " † " " very great credit.

DICK COLLEGE—

Mr. D. Barmingham
„ T. Boucherhayes
„ E. Bourke
„ H. J. Bradbury
„ M. Bray
„ W. H. Campsall
„ A. Carse
„ J. Conway
„ D. Cumming
„ P. M. Edgar
„ F. Edwards
„ B. George
„ W. W. Golding
„ H. Grimes
„ S. Haffield
„ J. D. Holmes
„ W. Hunter
* „ W. E. Ison
„ S. Johnston
„ F. Lindsay

Mr. A. M. McClew
„ P. McCloghry
„ W. M. Miller
„ G. Moir
„ J. Morris
„ E. Moynahan
„ W. H. Nicol
„ J. H. Norris
„ W. H. Pickering
„ T. K. Ramsay
„ W. Rees
„ A. R. Routledge
„ J. F. Scott
„ J. M. Sinclair
„ A. C. Smart
„ J. Walker
„ E. Wardrop
„ J. Watson
„ R. Watson
„ W. S. Worthington

NEW COLLEGE—

Mr. J. T. Allen
„ G. C. Barber
„ T. Bowlas
„ J. Buck
„ R. H. Connochie
„ T. Dick
„ T. Dickinson
„ J. A. Duff
„ W. M. Evans
„ W. Greaves
„ J. Hardie
„ J. E. Hutchinson
„ J. Kenyon
„ F G. Liddle

Mr. H. Locke
„ J. E. Mills
„ R. Marnane
„ J. Pollard
„ J. McPhail
„ T. O. Richardson
„ R. C. Robinson
„ R. S. Rowland
„ W. Russell
„ T. Ryan
„ C. H. Stevens
„ J. M. Walker
„ M. E. Williams

Marked thus * passed with great credit.

R. RUTHERFORD, F.R.C.V.S.,
Secretary to Board of Examiners.

MEETING OF COUNCIL, HELD JUNE 7TH, 1893.

W. J. MULVEY, Esq., President, in the chair.

Present:—General Sir Frederick Fitzwygram, Professor Walley, Veterinary-Colonel Oliphant, Veterinary-Captain Raymond; Messrs. Hartley, Mason, Merrick, Trigger; Mr. A. W. Hill (Secretary), and Mr. George Thatcher (Solicitor).

The SECRETARY stated that he had received letters from Messrs. Whittle, Headley, Taylor, Burnett, and Nisbett, regretting their inability to attend the meeting. He read a letter from Mr. McGuinness, of Dublin, asking what had been arrived at as to the form of testimonial in memory of J. H. Steel, V.S., and offering certain suggestions.

The PRESIDENT said that the question had already been settled by the Council, and he did not think it was at all a matter to bring before the annual

meeting. He suggested that a reply be sent to Mr. McGuinness, referring him to the reports that had appeared in the journals.

Agreed to.

The PRESIDENT stated that last year a grant of £20 was made towards the expenses of the dinner. It had occasionally been done at other times; and the Dinner Committee recommended that the grant should be continued.

On the motion of Mr. MERRICK, seconded by Mr. MASON, it was resolved that a grant of £20 be made towards defraying the expenses of the dinner.

The PRESIDENT said that the following notice of motion stood in Mr. James Simpson's name:—"That the following resolution, which was passed by the Council on the 5th January, 1893, and confirmed at a special meeting on January 12th, 1893, be rescinded: 'That the travelling expenses of the delegate or delegates be defrayed from the funds.'" Owing to a family bereavement Mr. Simpson was unable to be present that day, and had asked him (the President) to allow the question to be postponed to the next Council meeting.

Professor WALLEY asked if anything had been settled with reference to the examination next April. There was a movement going on which suggested that they should begin in September and terminate in March. Two of the Scotch colleges had advertised their intention of beginning on the 7th of September. His college had not done so, for the simple reason that they did not understand how matters stood. Perhaps General Sir Frederick Fitzwygram could tell the Council what the Royal Veterinary College intended to do. If it said, "We will not commence until October and terminate at the usual period," then naturally the Royal College of Veterinary Surgeons must hold an examination for them, and the colleges in Scotland would be hanging on for months.

General Sir FREDERICK FITZWYGRAM said that the Royal Veterinary College was quite willing to begin in the early part of September, and wished that the examinations should be held at the end of March.

The PRESIDENT said the Council had quite expected to receive some communication from the Royal Veterinary College (but they had not done so), and then they would have been able to announce when the examinations would be held. The matter had been brought before the Principals of the Scotch schools, and they had at once agreed to commence in September; but the Council had not been able to do anything in the matter, because the question had not been brought officially before it. If the matter had been settled in the way suggested by Sir Frederick Fitzwygram, the Council would be quite willing to alter the date to suit the schools. He thought there would be no doubt that at the next meeting the Council would agree to change the date.

General Sir FREDERICK FITZWYGRAM said there was a very strong wish on the part of the Royal Veterinary College to have it at the end of March rather than the last week in April.

Professor WALLEY said that if they began early in September they would be able to do that.

Mr. TRIGGER said he was sure the profession would prefer it.

Professor WALLEY said that some time ago when the question of written examinations was under discussion, he had asked the Council if the teachers of the colleges might, if they required, have access to the papers of the candidates. Unfortunately two errors in the marking of papers had occurred, but those were rectified. He wished to have access to the papers on anatomy of a certain student who, in his opinion, ought to have passed his examination. He did not make any charge against the Examiners at all; but if a mistake had been made, surely it ought to be rectified.

The PRESIDENT observed that the matter was one that ought not to be decided without very grave consideration.

Professor WALLEY said he would give notice that he should raise the question at the next meeting of Council.

A vote of thanks was accorded to the President.

FIFTIETH ANNUAL MEETING, HELD JUNE 7TH, 1893.

W. J. MULVEY, ESQ., President, in the chair.

Present:—Professors McFadyean, Macqueen, Pritchard, Penberthy, McGill, and Shave; General Sir Frederick Fitzwygram, Bart., Veterinary-Colonel Lambert, C.B., Veterinary-Lieutenant Colonels Walters and Oliphant, Veterinary-Major Glover, Veterinary-Captain Raymond, Veterinary-Captain Smith, Veterinary-Lieutenant Butler; Messrs. Anderson, Almond, Boswell, Bruce, J. Roalfe Cox, Corby, Clark, Faulkener, Garnett, Gostling, Gosling, Gibbs, Harris, Hartley, Hopkin, Hurndall, Hunting, Jacobs, King, Lawson, Lowe, Leather, Macdonald, McDougall, Mason, McOnie, Merrick, Owles, Pattison, Parr, Perryman, Reakes, Rowe, Rogerson, Rutherford, Steel, Selfe, Samson, Singleton, Trigger, Wragg, Ward, W. Wilson, F. W. Wilson, Mr. Thatcher (Solicitor), and Mr. A. W. Hill (Secretary).

The SECRETARY stated that the result of the election was as follows:—Professor Walley, 719; Mr. Mulvey, 715; Professor MacFadyean, 686; Professor Williams. 659; Mr. Wragg, 627; Mr. Lawson, 600; Mr. Elphick, 586; Professor Edgar, 570; Mr. Falconer, 557; Veterinary-Colonel Oliphant, 556; Mr. Kidd, 532; Mr. Hunter, 529; Mr. Thompson, 513; Professor Shave, 503; Mr. Peele, 389.

On the ballot being taken, Veterinary-Colonel Oliphant was pronounced to be elected in the place of Mr. Whittle, resigned.

The PRESIDENT said that, on behalf of the Council, he had much pleasure in welcoming the members to the fiftieth annual meeting of the Royal College of Veterinary Surgeons. He did so with a feeling of satisfaction that it had not only been a memorable year in the history of their profession, but something had been done to place it on a surer and firmer basis than before. The report gave some idea of the reforms and improvements which had been introduced. Among them he might point with pleasure to the fact that by the new charter all disabilities were removed, and that now every member could aspire to a seat on the governing body of the profession. He considered it his duty to mention that there were certain members of the profession who had worked very hard, in a quiet and unobtrusive way, for the new charter, and to them the thanks of the profession were due. In particular, he would mention the names of Messrs. Kidd, Dollar, Hurndall, and Alexander Lawson. As soon as that vexed question was settled by the granting of the charter, the Council set themselves vigorously to work to improve the educational status of the profession, first, by adding a written test to the professional examination. That came into operation in May last. It was a remarkable success, and would doubtless produce good results. After that, the preliminary education examination was placed on the same footing as that required for the medical profession. Since then a bye-law had been carried, making it compulsory for every candidate to undergo four years' study. A want long felt by Council, teachers, and examiners had been supplied, namely, the syllabus which had been drawn up of the subjects in which it was proposed to examine. The last of the educational subjects with which the Council had dealt was that of the fellowship degree; the examination for that degree would in future be of such a character as to demand from everyone who obtained it scientific attainments of no mean order. In addition to the educational work, the Council, ever mindful of the interests of the profession, watched with a very jealous eye the application that was made to the Privy Council for a proposed charter for the Gresham University. A

formal protest by the Royal College of Veterinary Surgeons had been entered against its being granted. They had applied to be heard in person, but the charter was rejected by the Royal Commission. The work of the year had been exceptionally heavy, and had entailed on the Executive constant care and an immense amount of labour. When he mentioned that since the last annual meeting between fifty and sixty meetings had been held, including committees, he was sure they would concur with him that the honourable position of Members of Council was no sinecure. The time devoted by the Council to the work of the profession had been ungrudgingly given, because they believed the goods results obtained were a sufficient reward for their labours, and would meet with the approval of the whole profession.

Professor WALLEY moved that the annual report be received.

Mr. MERRICK seconded the motion, which was agreed to.

Professor WALLEY moved that the report be adopted.

Mr. HARTLEY seconded the motion.

Professor MACQUEEN said that the first thing he noticed in the report was the peculiar spirit of self-congratulation that pervaded it, which would be specially observed in the first paragraph. He thought the report, as it appeared, was not in keeping with the prestige of the Royal College of Veterinary Surgeons. Amongst other things, he objected to the appearance of attendances of members of Council if it appeared at the expense of the obituary list. It seemed that the registration of shoeing-smiths had given the Council a great deal of trouble, for the report stated, "In consequence of the ever-increasing work of the Secretary's department, the Council have found it necessary to appoint a clerk." He supposed it might be taken that that was on account of the immense ordeal the Council had to pass through in registering shoeing-smiths. He had very little to say with regard to the question of the Farriers' Company, and he had nothing to say in the way of criticism as to what had been done two, three, or perhaps four years ago. He remembered that a special meeting of the Council was occupied with the discussion of the registration of farriers. Professor Axe occupied the chair, and Sir Henry Simpson was then an important member, and other members appeared to have taken part in the discussion. Those gentlemen, however, had disappeared from the Council, but the fact remained that a very important discussion took place so long ago as 1890. He alluded to that discussion for this reason,—that some of the members of the profession, and amongst them members of the Council, were under the impression that there had not been the slightest criticism or objection to the scheme of registration of farriers. He wished those who were concerned with the question would consult the *Veterinary Record*, where full details were given of the meeting. Many objections were urged, some by Colonel Lambert and some by Mr. Wilson, and, as frequently occurred at those meetings, the subject was quietly talked out. On referring to the *Veterinary Record* it would be found that on the 11th October, 1890, the editor indulged in an editorial note to the effect that "no one knows what the Farriers' Company have yet done." On the same date a quarterly meeting of the Council was reported, and suggestions were made by Mr. John Roalfe Cox and Dr. Fleming as to how the registration might be carried out. The discussion was carried on by Mr. Trigger, Mr. Hunting, Professor Walley, Mr. Burford, Mr. J. F. Simpson, and Mr. Rutherford, and, as usual, the subject was talked out. With regard to the agitation in the matter, although registration had taken place, it had not taken place without objection, criticism, and opposition. In some of the discussions he noticed that some of the members of Council were under the impression that the Royal College of Veterinary Surgeons had nothing especially to do with registration. He wished to remind those members that the registration of farriers was part and parcel of the work of the Council, and that they had on two occasions elected three members to the

Farriers' Registration Committee; and inasmuch as they had done so, they had lent a helping hand to the registration of "foot specialists." He did not wish to take up the time of the meeting in referring to the remarks which had been current since 1890, but he might mention the names of one or two gentlemen who had interfered by pen or voice in the question. Mr. Blakeway, of Stourbridge, wrote in 1890 complaining of registration and its dangers to practitioners. The editor of the *Veterinary Record*, in February, 1891, said, "The scheme has taken a practical form; 700 applicants for registration have already been noted." At the same time a letter appeared from Mr. Trigger, who was strongly in favour of registration. On February 14th a writer, signing himself "Fairplay," criticised adversely Mr. Trigger's statements; and at a future period an editorial note appeared directing attention to regulations adopted by the representatives of three bodies, and regretting that the word "farrier" was not adopted. Then Mr. Blakeway reappeared; and Mr. Crawford called attention to the registration of doormen as well as firemen. It was a fact that doormen and firemen had been registered as equal by the Worshipful Farriers' Company. Men called doormen, who had never made a shoe, and could not make one if they were paid for it, had been registered and placed on the same level as firemen, who were supposed to be capable of making shoes. A great number—he could not say how many, but thousands—had been registered, although they had never been examined. It was in April, 1891, that the first lectures to shoeing-smiths were delivered. They were delivered by Professor Pritchard; and to give some idea of the extent of the knowledge vouchsafed to those gentlemen who were about to become specialists, he would quote from the synopsis of those lectures. The first lecture was devoted to the consideration of bones and ligaments of the horse's foot, the second to vascular and sensitive portions, the third to the hoof, the fourth to the preparation of the foot for the shoe, and the fifth to the kinds and uses of shoes, and their application. He had no fault to find with the instruction or the instructor. On the 24th October, 1891, a Council meeting was held, and a discussion took place with regard to the re-election of the Committee. He need not remind gentlemen who were present at that meeting, that there was a great deal of disagreement with regard to the permanency or otherwise of the Committee. The whole discussion hinged on the question of whether Committeemen were appointed for life or not. At a subsequent meeting Mr. Thatcher, the adviser and soul-saver of the Council, took the course of advising that the Committee was not a permanent one, and that representatives must be elected every two years. He might add that the discussion, *re* farrier's question, like a great many that had preceded it, dropped. In 1892, the editor of the *Veterinary Record* referred to the registration of shoeing-smiths, and indulged in an editorial note, from which he (Professor Macqueen) took the following extract:—"A fear was expressed when the scheme was first mooted, that the registration of farriers might encourage shoeing-smiths to leave the anvil, and take to doctoring. Recent complaints to the Council show that some registered farriers have attempted to do this." It would be remembered that Mr. Hunting was then a member of the Council, and no doubt he reminded other members of the Council of the danger, but the immaculate Council did not see any occasion to take any action at that particular period. On the same day Mr. Alton, of Derby, wrote complaining of farriers practising, and that many people in the country did not understand the difference between a farrier, a registered shoeing-smith, and a veterinary surgeon. Then they came to the resignation of Sir Henry Simpson, who vacated his seat on the Council and on the Farriers' Committee. His place was taken by another member. The editor on that occasion alluded to the resignation, and discussed the theory of the permanency of the Committee, and concluded that the veterinary surgeon members of the

Farriers' Committee were under the control of the Council. On January 25th, 1891, the President, Mr. Mulvey, brought to the notice of the Council that a portion of the Committee retired biennially according to the scheme, but again the consideration of the subject was deferred until the next quarterly meeting. The position he wished to assume was this, they could not undo what had already been done. He had no doubt that those who initiated the registration, were actuated by the very best possible motives, and no doubt they obtained what might be called kudos by that action. He did not say that it was wrong to elect so many hundreds of shoeing-smiths on the Register of Farriers without examination of any sort or kind, but it might be contended to be a grievous mistake. He did not object to the periodical lectures of itinerant dispensers of stale veterinary science, but he did object to the Council assisting and participating in the registration of a body of men that were calculated, when registered, to interfere with the living of younger practitioners. The men who were entering the profession every yeart demanded some consideration from the Council, and some protection that it would not by its representatives participate in the registration of a body o men whom he called "potential quacks" and "potential competitors"—men who were capable of interfering with the proper success of graduates who had paid dearly for their position. That was the position he took up, and he thought it was a question worth consideration. On referring to the Worshipful Farriers' Company, it would be seen that its certificate of incorporation dated as far back as Charles II. It would be understood that they had certain powers which they might exercise. He did not know that they had bound themselves not to exercise the powers they possessed; but there was nothing to hinder six or seven thousand men, who might be registered within the next year, from agitating in the very near future for a position that would enable them to treat the diseases of the feet of horses. They could say that they had listened to the lectures of Professor Axe, Professor Pritchard, and Dr. Fleming, and that they had passed an examination on the anatomy of the foot, the mode of treating the foot, the preparation of the foot for shoeing, and the proper shoe to adopt, and so on. That was a contingency which might arise at any time. The six or seven thousand men might band themselves together, obtain the assistance of their members of Parliament, and, in the present days of reform, there was no reason why they might not obtain from the Government power to exercise the profession of veterinary surgeon, or something equal to it—foot specialists —to deal with diseases of the feet. That was a fear which he expressed, and he believed there was something in it. As a matter of fact, they now exercised, without power to do so, the position of doctors of horses' feet. ("No.") There was plenty of evidence of it, and he noticed in the statements of accounts that there was a sum of over £400 for law expenses. No doubt a good deal of that money may have been spent in obtaining the new charter, but no doubt there was a large expense for lawyers and court fees. The Registration Committee was engaged in checking shoeing-smiths and horse-shoers generally from using the title of veterinary surgeon and the word "veterinary." They had recently tried to stop chemists from assuming the name "veterinary," but it failed. It was an excellent thing, but they were a little bit too late in prosecuting people for using the title "veterinary," and leading the public to believe that they were engaged in the practice of veterinary science. Without perhaps knowing it, they were unwittingly giving those shoeing-smiths an excellent advertisement. To-day the registered shoeing-smith had on his signboard "Veterinary Shoeing Forge," tomorrow an emissary of the Council appeared and said, "You must remove that word 'Veterinary' from the board." The board was then whitewashed over, and the word veterinary disappeared; but in a few days its place was

taken by the letters "R.S.S." or the words, "Registered Shoeing-Smith: Horses shod according to the construction of the foot," or something to that effect. It was an excellent advertisement, for the public, who were very easily gulled, would be under the impression that the man had cleaned his signboard for the purpose of putting up the words "Registered Shoeing-Smith," and not for the mere purpose of taking away the word "Veterinary." In conclusion, he would say that he had no feeling against what had been done in the past with regard to registration of farriers, but some alteration must be made in the immediate future; and when the question came up before the Council, as it might do very soon, he hoped it would not be talked out. The Council must exercise very careful consideration before deciding one way or the other. It might not be good form to withdraw entirely from the registration; but it might be necessary to exercise a considerable amount of pressure on the body responsible for the registration, and to exact from it a promise that those who obtain the certificate should not exercise, or lead the public to think that they exercised, any right to treat ailments of the horse's hoof. Let them look to the future. He would remind the members of Council that there was an election every year, and if the question did not receive due consideration, although he only represented a very small body, he should see that it became a question at the next election time.

Mr. LEATHER said that although he did not think the profession need fear to the extent mentioned by Professor Macqueen, it was a fact that in the neighbourhood of Liverpool several men had been advised that they could use the term "Registered Farrier. Examined by the Royal College of Veterinary Surgeons."

A MEMBER: They have been badly advised.

Professor MCGILL said he agreed to a great extent with what had been said by Professor Macqueen. When the question was brought to the front he corresponded with Mr. Wynne-Baxter, the secretary for the registration of shoeing-smiths, and pointed out to him that if they wanted to do the right thing they must institute examinations—not only a verbal, but a practical examination. He also told him that an examination for doormen as well as for firemen should be instituted, and that he knew forty or fifty men who were willing to undergo examination. Afterwards he wrote to the Farriers' Company saying that if the gentlemen who were appointed examiners would set apart a date for the examination, he could produce men enough to give them two days' examining, if not more, and would set a forge at their disposal, so that the men could be put through a thorough practical test. He found shortly after that that a great many men who sent in their papers received certificates as registered shoeing-smiths without a single examination, although they had requested to be examined. The consequence was that he had men in his employ who could no more make a shoe than fly in the air. Those men were doormen, and better men could not be found for fixing a shoe. On the other hand, he had firemen who had been so long at the fire that he could not trust them to put on a shoe or drive a nail, although they could make a perfect shoe. In his opinion the veterinary profession should have nothing to do with shoeing-forges. At the present time there was a fellowship degree, and a great deal had been said about it. He asked the Council seriously to consider whether a still higher degree could not be instituted, Doctor of Veterinary Medicine, or something of that sort; but to make it a condition that everyone who stood for that degree should sign an agreement with the Royal College of Veterinary Surgeons that he would have nothing whatever to do with shoeing-forges. It was time they shook themselves clear of the chain that had so long bound the veterinary profession and kept it in the dust, for it was by connecting themselves with shoeing-forges that they had kept down the status of the profession.

Mr MERRICK said that fortunately he had never had a shoeing-forge, and personally did not in the least fear the shoeing-smith. He had always found that the shoeing-smith who knew his work was of more assistance to the veterinary surgeon than one who did not know it. He had recently sent up a notice to Mr. Hunting that he had seen a board on which was inscribed "John Ogden, R.S.S.," and "Royal shoeing-smith" underneath. He communicated with Mr. Wynne-Baxter, and shortly afterwards he noticed that "Royal" was removed, and "Registered" was put in its place. He quite agreed with Professor McGill that the sooner the veterinary profession had nothing to do with the forges, and left them to educated blacksmiths the better.

Mr. HUNTING said he thought it would be as well to point out that they were present to discuss the annual report and not a little corner of it. The report contained references to work which had just been completed, and which had occupied the profession for about four years—work which had raised a good deal of feeling—work which they were told was so important that while it was being done the profession had no time to pay attention to such a small matter as that of farriers. When not one word had been said about the rest of the work, and so much had been said about that little subject, did it not seem somewhat slightly wanting in proportion? It reminded them of Abraham Lincoln's tale of the Mississippi boat. There were some very dangerous rapids to go through, and it was a question when the boat entered them whether she would not go to the bottom. It was so dangerous that the captain himself took the helm at this point. One day in the middle of the rapids, at the most dangerous part, a little boy, who had been playing about the deck, ran up and said, "Captain, just stop here, will you? I have lost my apple overboard." He (Mr. Hunting) must say that he thought Professor Macqueen had lost his apple overboard. After all, the whole drift of the Professor's argument was that there was a potential and possible injury to be inflicted by some village farrier on the veterinary profession, because he had some letters put at the end of his name. It was Bentham's old fallacy of the thin end of the wedge. But it was so thin and so transparent that he was surprised at Professor Macqueen wasting so much time over it. It had been said that they had to look forward to the six or seven thousand registered farriers putting pressure on their members of Parliament and County Council men, and getting a new charter, and in that way upsetting the veterinary profession. They must not be led away by that sort of thing. As a member of the Council, he asked them if they did not think it had done some good work during the year? If they thought so, they should not let the little matter of the farriers run in their way, and they should not be modest about expressing their gratitude.

Professor MACQUEEN said that, with reference to the possibility of the six or seven thousand registered shoeing-smiths applying for a charter, he would remind Mr. Hunting that from a much smaller beginning the veterinary profession obtained a charter. He was afraid Mr. Hunting had forgotten the origin of the profession and also its connection with the shoeing.forge.

Mr. HUNTING said that, so far as he knew, the beginnings of things were always small. All animal life, he supposed, came from a microscopic bit of protoplasm.

Professor SHAVE said he should like to ask the Council what good the veterinary profession was likely to derive from its participation in the farriers' scheme. He hoped the profession would exercise its influence and ask the examiners not to sign the certificates. Farriers seemed to think that it gave them a sort of veterinary degree to have their certificates signed by eminent veterinary surgeons. Although that might not injure the gentlemen who sat on the Council, it certainly injured the younger members of the profession. He

firmly believed that the next thing those men, who were now putting before the public that they understood the anatomy and physiology of the horse's foot, would do would be to say that they were perfectly competent to treat cases of foot disease. A large number of horse-owners were comparatively ignorant people, who did not know anything of the significance of the examination, and who thought it was quite as good an examination as that which a veterinary surgeon had to pass.

Professor SMITH said that although they did not consider the farriers' question was altogether satisfactory, they quite recognised that the work which had to be done, so far as improved education and so on was concerned, was a matter for congratulation. He was not at all affected by men having the letters R.S.S. after their name, and he could therefore speak in a perfectly unbiassed manner as to what had been done. He had hoped that Mr. Hunting, who perhaps more than any man had the scheme at his fingers' ends, would have cleared the atmosphere and shown them that no danger need be apprehended in registering those men. They had simply Mr. Hunting's *ipse dixit* that they need not be frightened and that they were strong enough to take their own stand. Speaking for himself, he certainly saw some danger in the indiscriminate manner in which those men had been registered. The men had been registered without examination, which was a very serious blot on the scheme as it at present stood. That some necessity existed for an improvement in shoeing there could be no doubt, and the sooner a reform in that direction was made the better.

Mr. OWLES thought the Council would do well to give some consideration to the views which had been expressed by the members of the profession, and asked if some evidence could not be taken as to the effect the registration of farriers had on the position and practice of the veterinary surgeon.

Mr. HURNDALL said he was one of those who have very strong feelings against veterinary surgeons being associated with shoeing-forges. Although he did not entertain any fears as to what farriers with R.S.S. after their names might do, he had reason to know that those gentlemen who did entertain fears on the subject did so on very good grounds. He had come across farriers who having received their certificate of R.S.S. had set themselves to treat cases of the foot. His advice to to the profession was that they should dissociate themselves entirely from the Farriers' Company, and he asked the Council to give the matter their most serious attention. He had been told on good authority that no such thing as a practical examination had been attempted since those diplomas or certificates had been issued, whereby those men took to themselves the liberty of putting R.S.S. after their names. The public were misled by those letters, which indicated a title, and put confidence in men who had no ability and nothing to warrant it. He hoped that during the coming twelve months considerable alterations would be made in the registration of shoeing-smiths.

Mr. WRAGG said a complaint had been made that the Farriers' Company were creating "foot-specialists." He would ask those gentlemen who had forges how many men in their employ they could send out to see a lame horse, and cut out the foot, and whether, when the man came back, they could take his word that the horse was lame or not in the foot. In his experience shoeing-smiths were totally unreliable and were a class of men that were never likely to come forward and set themselves up as "foot-specialists." He was aware that the question of examination had been very much discussed in the profession, but he should not like it to go forth that the certificates of shoeing-smiths had been signed by veterinary surgeons without those shoeing-smiths being subjected to an examination. He might mention that at a meeting of the Farriers' Company it was decided that every shoeing-smith coming up for examination in the future should undergo a "manual" examina-

tion, by which was meant that the man should go to a forge, make a shoe, and put it on the foot. The "practical" examination of every farrier who had registered had been where there were models on the table. When he mentioned that the examiners were Dr. Fleming, Professor Pritchard, and Mr. Barford, he thought that they would agree that those gentlemen were qualified to examine men in such a manner as to certify whether they were competent to perform the duties of shoeing-smiths. He had been in a forge for thirty-seven years and he was certainly of opinion that it was quite competent for a practical man to examine a shoeing-smith and tell whether he was a practical farrier without seeing him make a shoe and put it on. With regard to Professor Macqueen's remark about doormen who had never made a shoe having certificates, it was his own conviction that there were very few doormen who, at the age of five-and-twenty had never made a shoe.

Mr. KING said that he had recently come across a label setting forth in glowing terms some specific for ring-bone and other ills that horseflesh was heir to. The name of the indivdual was at the bottom, and he stated himself to be a farrier and shoeing-smith, implying that he was something more than a shoeing-smith. He had forwarded that label to Mr. Hunting, and hoped he would print it, for it was evidently intended to impose upon the public.

Mr. TRIGGER said his name had cropped up in connection with the Farrier's Company, and perhaps he might be allowed to state his views on the matter. As he understood, the registration of farriers would have been an accomplished fact with the consent of the Council or without it. The question was, was it better that they should have representatives there to look after their interests, or that they should act antagonistically? In his opinion, their interests would be far better served by sending representatives. He quite agreed that the method of examination in the past had not been what they would have wished, and that there was yet a great deal to be done. He was sure that any suggestions that fell from the meeting would not only have the grave consideration of the Council, but of those gentlemen who acted on the Committee. The question had been raised about giving those men, or at all events causing them to assume the right to practise as veterinary surgeons, or poach upon the ground of the veterinary surgeon. He would ask whether it was only the registered shoeing-smith who acted as a veterinary surgeon? Was it not far more the man who was not registered? As a matter of fact, they had more control over a registered man, because if he were reported the R.S.S. would be taken away from him. On those simple grounds he had so far supported the registration scheme. He agreed with Professor Macqueen that it was only courteous to the deceased members that a full obituary list should appear. It might well take the place of the "Attendances of members of Council." He would give notice that at the next Council meeting he would call attention to the matter, on the ground that during the past year he had only been summoned to fifteen Council meetings, whereas there appeared to have been twenty.

Mr. GARNETT said that in his opinion the three members of Council elected to the Farriers' Company Committee were responsible to the profession, and he would move that the discussion be adjourned until those members had submitted a full report of what had been done.

The PRESIDENT requested Mr. Garnett to put his amendment in writing.

Mr. STEEL said he happened to be one of that class which Professor Macqueen had very pointedly, and perhaps facetiously, described as "itinerant dispensers of stale science." He entirely disputed the appositeness of that gentleman's remarks. They were not dabbling in stale science. They were endeavouring constantly to drink from that pure fount of science that came from the different schools, and they refreshed themselves with the bubbling effervescence that sometimes emanated therefrom. He held an appointment

in Yorkshire, and, as far as he was concerned, the course of lectures was always preceded by a deliberate declaration that he was too loyal to his profession to think for one moment of interfering with its privileges. By strictly avoiding any interference with ordinary practice, he endeavoured to educate his hearers so as to be able to judge of the status of the veterinary surgeon. When he commenced lecturing he was extremely diffident, on the score of being likely to interfere with his brother practitioners. After his first course the appointment was put up to public competition, and there was a whole host of applicants from the veterinary surgeons themselves. On those grounds the diffidence he had originally felt had entirely disappeared.

Veterinary-Captain BUTLER said he thought the Council were to be congratulated for the work they had done in altering the regulations for the Fellowship degree, but he hardly thought the time allowed for the papers was sufficient.

Mr. WILSON also expressed his opinion that the time allowed for the papers was insufficient, and he hoped the Council would see its way to give an hour for each question, instead of half an hour.

Mr. RUTHERFORD said he had just conducted an examination where 246 students had sat down, and out of that number only two or three had found the time too short. The great majority of men were ready with their papers long before the specified time had expired.

Professor MCFADYEAN stated that that was not the experience of the students in London.

Mr. GARRETT then handed in the following amendment:—"That the discussion upon the clause in the report dealing with the Farriers' Company and the registration of shoeing-smiths be adjourned until a full report be received from the members of Council serving upon the committee, in conjunction with the Farriers' Company, in the matter of the registration of shoeing-smiths.

Professor MACQUEEN seconded the motion.

The PRESIDENT said that he would put the motion that the meeting stand adjourned.

Mr. THATCHER (Solicitor) said that there appeared to be some slight misconception as to the duties of the representatives on the Registration Committee of the Farriers' Company. That Company had promulgated a scheme for the registration of shoeing smiths, and a joint Committee was elected by the Farriers' Company, the Royal Agricultural Society, and the Royal College of Veterinary Surgeons. That Committee owed no duty or allegiance whatever to the College. The only way that the College had any power over the members they elected was that they need not re-elect them if they were not satisfied with what they had done. He ventured to lay it down as an axiom, that neither the Council nor the College had any power to compel the members they had selected to submit any report of their proceedings while on the Committee. If the amendment were passed they would be placing themselves in this foolish position; that they had adjourned the meeting until they had received a report from those gentlemen, who could, if they chose, snap their fingers at them. If those gentlemen gave a report at all, it would only be as a matter of courtesy and not as a matter of right. He submitted that it was neither suitable nor dignified for a great profession like theirs to place itself in such a position.

Mr. PARR considered that if the Council had no control over their representatives they ought to be withdrawn.

The PRESIDENT asked Mr. Garnett if he persisted in having his motion pu after what the Solicitor had said?

Mr. GARNETT said that he did.

The PRESIDENT said that on the ruling of the Solicitor he should put "That the meeting stand adjourned."

Professor MACQUEEN (amidst some confusion) said he questioned whether the Solicitor had a right to be present, and he further disputed the statement of Mr. Thatcher that the Council had nothing to do with the question of the Worshipful Company of Farriers through the medium of its representatives. If it was the view of the members that the meeting should be adjourned, let it be done; but as far as he was individually concerned he should prefer to have a special meeting called.

After a short discussion, The PRESIDENT put the motion for the adoption of the report, which was carried, there being only three dissentients.

On the motion of Mr. TRIGGER, seconded by Mr. HARTLEY, a vote of thanks was passed to the scrutineers.

The PRESIDENT stated the report had been printed on thin paper for the purpose of saving expense in postage.

Professor MACQUEEN, in moving a vote of thanks to the President, said that if any words of his had at all contributed to ruffle the proceedings they had not been spoken with that intent. He had only the profession at heart, and that must be his excuse for any heat he may have indulged in.

The motion was carried with acclamation.

The PRESIDENT having acknowledged the vote, the proceedings terminated.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

(Continued from page 437, vol. xxxvi.)

IN order that rumination may take place the stomach must be moderately filled with food, otherwise the walls of the rumen will be flaccid and the abdominal muscles will be ineffective in doing their part. Since, then, no digestion or absorption (Meade Smith) occurs within the first three gastric compartments, an animal under such a condition might die of hunger with its rumen still partly filled with food. On the other hand the paunch must not be very much distended, or its walls will be paralysed and will be prevented from re-acting on its contents. Ruminants must always be well supplied with water, and their secretion of saliva must be active. Rapidly grown grasses from irrigated meadows distend the rumen far more in proportion to their solid elements than other forms of food, this distension soon subsides and the rumen then appears empty, but the animal cannot as effectually ruminate as with some harder and drier food, as a certain bulk is required to permit of regurgitation. Rumination does not, as a rule, commence until after the animals have been watered. The position assumed during the act of rumination is common to all ruminants, it is very characteristic and undoubtedly aids the function. Ruminants are very timid and easily frightened, and the slightest disturbance arrests rumination, I believe the two *primary* causes in almost every case of derangement of the digestive organs, (apart from foreign bodies and tuberculosis) are insufficient supply of water, and temporary paralysis of the walls of the rumen. The former will allow the great mass of food in the rumen to become very hard, the churning motion of the stomachs will be almost stopped, the food will adhere to the mucous membrane and so produce congestion and, probably, the second cause—paralysis. This is especially liable to be the case with stall fed animals, where a quantity of meal and dry food is given and the water supply irregular. The second cause, paralysis, may be produced either as stated above, or by the excessive quantity of food given, or by the character of food producing excessive gases.

Tympany, Hoven, or Blown—distention of the rumen with gas. This is a very common affection amongst cattle, especially those turned in yard or on

pastures. Much more rare amongst dairy or stall fed animals. It is probably more frequent in the early autumn or spring, and is usually caused by raw potatoes, frozen roots—especially swedes, and young clover or Lucerne when the dew is on it, also young wheat. A few months ago I had brought under my notice three cases in store animals that had recently been tied up, and were littered down with partly dry and partly green bracken; all three occurred within three days from when this was first used. We also get it when cattle have been eating acorns; in the latter cases, we generally get blood discharged with or following defæcation. In cases of choking, tympany is a very early symptom, also in animals that are compelled to remain in a recumbent position, as in paralysis or parturient apoplexy. It is also present in other diseases, notably anthrax and black quarter. There are always certain quantities of gases present in the rumen, and there are two ways of escape for them, either through the omasum or the œsophagus, but when the gases are too rapidly formed, their escape is cut off by the rapid distention of the rumen. Tympany may be acute or chronic, and the urgency of the case will largely depend upon the cause. The symptoms are probably too well known for me to waste time in detailing them. The great and immediate danger is suffocation, due to the greatly distended rumen pressing on the diaphragm, and so preventing proper inflation of the lungs. The first thing for us to ascertain is whether the tympany is due to œsophageal obstruction, so I always recommend that the probang be passed first; we can then determine if such is the case, and also the gases will generally escape when the stilletto is removed, but not always; as often the probang will become choked with the food from the rumen. If it does, and the tympany is severe, do not hesitate to use the trocar, as no ill effects need be feared. The medicinal agents to be employed will depend greatly upon the cause, but my advice is not to use sulphate of magnesia, as this generally increases instead of diminishing the quantity of gas. The gases generally found in recent cases are carbonic acid and carburetted hydrogen; in more prolonged cases sulphuretted hydrogen is present in large quantities. Our first aim must be to give those agents which will decompose the gases and arrest fermentation. To soothe the mucous membrane, at the same time to prevent or relieve any congestion that may be present, mucilage in some form should be given; and very particular attention paid to dieting, no hard or indigestible food must be given for some few days at the least.

In chronic tympany we have a far more tedious and aggravating disease to deal with. This probably arises from imperfect and insufficient secretion of saliva, or extreme debility of the mucous membrane of the rumen, or some debilitating disease such as tuberculosis. Many years ago I had a most obstinate case. I do not know how long it had been under treatment before I was called in, but I believe some time; the subject was an aged cow in fair condition, but the rumen was constantly filled with gas. I tried all ordinary remedies. I kept the trocar in for about two or three weeks and the cow seemed to make progress, chewed the cud, and fed well; but as soon as the tube was removed the tympany returned, and practically after six weeks' treatment in which all available agents of the pharmacopœia were tried the cow was in much the same condition. I believe she was ultimately killed, but I did not have any opportunity of making a *post-mortem* examination. There was no cough present, and, although at times the tympany was severe, very little grunting. I shall never forget the trial that case was to me as a young practitioner. I rather suspect the cause may have been a hair-bulb; the bowels acted very consistently after the first few days of treatment.

The next disorder we will treat of is Dyspepsia, Plenalvia—Impaction of the rumen. I consider all these to be different stages of the same disease. It causes much havoc, especially in the London dairies, during the winter time

or late autumn, when the cows are fed on a considerably increased quantity of either distillers' or ale grains and meal, and when a necessarily corresponding increased quantity of liquid is often not given, or not given at the proper times. The common names for this affection is grain-sick or maw-bound. I consider this one of the most serious diseases (apart from contagious diseases) because it frequently implicates the mammary glands, and thus seriously affects the quantity of milk produced, and not unfrequently ends in the loss of one or more quarters. Probably the disease commences with simple indigestion or dyspepsia, going on if unheeded to plenalvia or severe impaction, involving all the stomachs. These cases usually occur, I should most certainly say, in the late autumn, when the cows are brought into stalls, kept without exercise, whilst a considerably increased quantity of forcing food is given; and when an insufficient or irregular supply of water is given and the stomachs are unprepared for the sudden change and extra work put upon them. As a rule, the dairyman is not over anxious to call in the aid of the veterinary surgeon too early, so that often the case has assumed serious proportions before we see it. We are generally assured by the owner or attendant that the case is very sudden, but very often the symptoms have been of gradual development. I admit there are some very sudden and severe cases. Generally the early symptoms are, the hide begins to get tight, the coat looks rough and unthrifty, the cow does not give quite her full quantity of milk, the rumen is rather hard and full, the food is not quite cleared up, nor eaten with the usual avidity; rumination not regular, and the animal does not look so bright and cheerful as she should do, but is rather listless. At this period the bowels are still acting fairly well, the pulse is rather sluggish, and the temperature slightly below normal. These symptoms, I believe, are present in 19 out of 20 cases, although often unnoticed by attendants, and it is at this stage that the veterinary surgeon could be of untold service to stock-owners if he only had the chance. The contents of the stomachs are now beginning to get hard and dry, and the mucous membrane and walls of the organs becoming inactive. If we can get the cases at this period our endeavours must be to relieve the rumen by a good aperient, and then give nerve tonics and stimulants and pay particular attention to diet—take off all stimulating food and give a liberal allowance of gruel and linseed tea. But probably the case has become aggravated—the symptoms intensified. The rumen is very hard and full, a painful grunt will be heard on pressure or when the animal is made to move, cessation of rumination and appetite, and back arched, secretion of milk almost stopped, one or more quarters very hard and swollen, from which can be drawn only a watery fluid with flocculi, fœces of a watery character with hard dark lumps. I had four of such cases in my herd of cows in a week, due to a considerably increased quantity of distillers' grains being given. In the early morning of the day on which my attention was called to them, constant rigors were noticed, and in one case there was paralysis for two days; the pulse in each case was small, the temperature 100 degs. To my mind there was no doubt that in all these cases all four stomachs were involved, and I believe this to be so in all severe cases of impaction. My treatment was to have the abdomen well rubbed with mustard and water, and the animal well clothed; I gave oleum lini and oleum tereb. and chloral hydrat., followed at intervals with antacids, antiseptics, and nerve stimulants. The udders were well fomented and rubbed with belladonna lotion. Two of the cases were very severe, and looked most unfavourable for twelve hours, but all four made a complete recovery, the cows returning almost to their full quantities of milk. I need hardly say that careful attention was paid to the diet, and the quantity of distillers' grains for the other cows reduced. I had only one slight case afterwards. We do not always get all these symptoms shown, some may be absent, others intensified; we may have very severe cases

of impaction without any swelling of the udder, but I have never known a case where the secretion of milk is not affected. Sometimes tympany may be present. The causes may be various; coarse, dry, rough hay will far more readily produce impaction than good oat straw. I have never performed the operation of ruminotomy for impaction, and I believe it has rarely been done in this country; if anyone present has done it, I shall be glad to know with what result. It seems to me to be very difficult to prevent the ingesta passing into the abdominal cavity—also to determine at what stage of the disease to operate. I always feel that if the case is beyond the power of medicinal agents, the animal had better be seen by the butcher at once. My experience of the intra-venous injection of eserine in cattle has not been favourable; it seems to produce extreme contractions and pain without any corresponding beneficial results. My brother's experience also agrees with my own. The grunt that is heard in disorders of the stomach may readily be mistaken for that of pleuro-pneumonia; but the temperature must be our great guide, together with other symptoms present, and the history of the case.

The 3rd stomach, omasum, psalter, or manyplies may be called the 3rd dilatation of the œsophagus, and is situated on the right side of the rumen and reticulum, descending from before backwards, and is lined by mucous membrane disposed in broad folds. These are of varying breadth, from 12 to 15 in number, and form almost complete partitions; between them are others gradually diminishing in size. The external surface of the mucous membrane of these folds in coated with an epithelial layer, which, when the omasum is not entirely fresh is readily stripped off. Below this horny layer comes the mucous membrane proper; it is provided with papillæ which are larger and thicker than those of the reticulum. The mucous membrane consists of connective and elastic tissue fibres and blood vessels, in it are often found unstriped oblique muscular fibres. Glands are entirely absent. The folds of the mucous membrane are papillated on the surface, the eminences being flattened on the side and pointed at the edge of each fold. When the contents of this stomach are examined in animals slaughtered in perfect health they are always found dry, and there is a disposition for the epithelium to become detached in shreds and adhere to the pulpy mass. The œsophageal canal communicates with this stomach on the right, the lower angle is raised above the level of the third stomach, especially during the action of the gullet, so that it is only when the pillars are at rest and liquids and soft food are descending, or when the contents of 1st and 2nd stomachs strike against the canal, that any food enters into the omasum. The opening between the 2nd and 3rd stomachs is extremely small, coarsely comminuted food is therefore incapable of passing into the omasum. It is important to remember this, so as to endeavour to get rumination restored as quickly as possible in all cases of disease, as the longer it is delayed the more difficult is it to get it restored.

I have been unable in any books that I have read to find what is the supposed function of the omasum, but it seems to me to be a sort of safety valve to the true stomach, rather to regulate the quantity and condition of the food than for digestion, as we find the abomasum is comparatively small, and if the food were allowed to enter it too freely or in too liquid a condition it would not be possible for digestion to go on. By some there is a particular disease known as "staggers" clue bound "vertigo" or "fog sickness" attributed to the impaction of this stomach, but I am of opinion that it is next to impossible to allocate any particular set of symptoms to this particular organ. I believe that in many if not all severe cases of impaction, all the stomachs are involved, in some cases one more than another, but this particular disease I believe, with Professor Williams, is due to inflammation of the true or fourth stomach. When we consider that no coarse or partially masti-

cated food can enter this stomach, and that it must mainly rely upon the first and second stomachs for its supply of liqnid, it seems to me difficult and unreasonable to say that this stomach is the cause of a disease. It does not run the risk of the rumen, it has not the digestive work of the abomasum, and my experience is that impaction of the omasum alone does not exist. The symptoms seen in staggers, especially those of the brain, all point to the true digestive stomach being involved.

Before leaving this I should like to give you some notes of cases my brother had in May of last year, and which he concluded were due to albuminoid poisoning induced by impaction and suspended function of the omasum.

May 1st, 1892. Called at 7 a.m. to go at once to a meadow about four miles from Dartford; one steer seven months old found dead, two others ill; on arrival the second animal was dead but warm.

Post-mortem examination of this latter animal. External appearance of body normal, no tympany of rumen, nor effusion of blood from anus or froth from nostrils; mucous membrane of nose very dry, slight catarrh from eyes, no subcutaneous extravasations. Purple patches on peritoneum, covering rumen, and intestines. Bladder half full, kidneys normal, liver good colour but rather soft, gall bladder full, rumen full of soft well triturated food, moist and normal; omasum as hard as a stone, and the contents dry and hard as powder; not a trace of mucous on any of the leaves, the mucous membrane of which crumbled away with the food as powder; purple extravasation at intervals in mucous membrane of intestines; ileo-cœcal valve purple; contents of intestines liquid, of a gelatinous consistence and yellow in colour. Heart, pericardium and endocardium covered with petechial spots, especially on columnæ carnæ; both ventricles and auricles full of uniform black clot; lungs engorged with blood, the lobules being well defined on transverse section; bronchial tubes full of frothy mucus, mucous membrane dark purple; lungs floated in water, spleen normal.

No. 2. Heifer, dead several hours; viscera still warm in places, liver, etc. All foregoing appearances present, but much more intense. External appearance of body, normal; excepting frothy discharge of mucus from nostrils, and conjunctival catarrh; no subcutaneous extravasations. Effusion of serum in pericardium, and whole of left pleura blood-stained; endocardium almost black from uniform extravasation. Emphysema under capsule of left kidney, but gland structure normal. Lungs as in No. 1, also omasum, dry, hard, and devoid of all mucus; ileo-cœcal valve, purple.

No. 3. Heifer, alive, very prostrate, anorexia, dry nose, profuse yellowish-brown diarrhœa, perfectly liquid; rumen full, soft, and no tympany. Pulse 60 full, temp. 100·8 degs.; resp. normal. Gave aloes and hypo-sulphite sodæ, and left a diffusible stimulant and ant-acid to be given every six hours.

The remaining nine calves were treated with an aperient, and their immediate removal was ordered, The animals had been feeding on a very rich pasture with a small allowance of hay, and had water from the river Darenth, 100 yards below a large paper mill. Two sheep had died in the same field a week or two previously, the owner thonght from overfeeding with maize. The calves had neither cake nor maize. Unfortunately my brother does not state the condition of the mucous membrane of abomasum.

There are two interesting questions that may be asked about these cases. 1st. Were they due to albuminoid poisoning? and if so would not the blood be affected and absorption take place from the true stomach and bowels, and the condition of the omasum be due rather to secondary effects, and not the primary cause of the disease? 2nd. Or were they cases of gastro-enteritis due to some irritant, possibly the effects of the pasturage?

I may add that the river Darenth is noted for its good trout fishing, and some years ago great numbers of fish died from the effects of chemicals

which came from the paper mills before mentioned; but in this case the water was analysed and certified as good river drinking water.

I think when we consider the intimate connections of the four stomachs, and how each one is really dependent upon the others for the effectual carrying on of its particular function, we shall see how unwise it is to state that this particular disease is due to one stomach, and that particular disease is due to another stomach, but that it is better to state the disease and give the symptoms, for after all we are bound in every case to consider the varied symptoms presented to us, and treat the case accordingly. When we have tympany, or impaction, diarrhœa or constipation, we must be guided in our treatment by the symptoms in the case before us. I believe it is utterly impossible for one stomach to be seriously involved without affecting the others.

Dyspeptic paralysis is very common amongst cows, but is rarely of a serious nature. The ordinary symptoms of dyspepsia are present with the addition of paralysis. That the paralysis is due to the stomachs is proved by the fact that as soon as ever the stomachs are relieved the cow gets up, apparently as well as ever.

Injuries from foreign bodies is also common in the ox, the foreign body generally passing from the rumen before involving other organs. The symptoms are varied according to the parts affected. I will only give you the notes of one case of injury, by wire passing from rumen to heart, and one case where the wire must have passed through all four stomachs into the ileum.

On July 20th, 1890, I was called to see a young shorthorn cow. I found her grunting very much, her left pleura was very sore, temperature 104°, pulse quick and small, rumen moderately full, no tympany, and bowels acting very well; heart sounds imperfect; I suspected heart mischief. The cow was treated, and apparently recovered; I left her on August 20th. I was again sent for on September 12th, when I found she had an enormous effusion between the fore legs and extending partly up the neck, the swelling pitted to the depth of half-an-inch; pulse almost imperceptible, and heart sounds indistinct. I considered my previous diagnosis confirmed, and I told the owner I was of opinion that she had pus in the sac of the heart due to a wire or something of the kind, and that the case was hopeless. On the 17th I shot her and made a *post-mortem* examination; I found a fibrous canal extending from the rumen to the heart, involving the pleura, through which a wire or something had passed into the pericardial sac, which was thickened to the extent of about an inch and contained from 1½ to 2 gallons of putrid pus. I could not find the foreign body, which probably was lost amongst the stinking mass of pus; it was a sight and odour which one could not readily forget. The heart itself was not punctured; it was simply marvellous how an animal could live in such a condition.

As I shall not have time to touch upon bowel affections I will here mention another most interesting and somewhat rare case of wire injury:—Subject, a valuable Jersey cow (after her second calf produced 11 lbs. of butter a week) which we were treating during parturition of her third calf and she was progressing favourably; the bowels were acting well and the cow ate what was given her. On the morning of the third day after calving we were sent for early to see her; we found her down, but sensible; in very great pain and restless, her nose was kept pretty constantly round to her left side, she continued in very great agony, moaning very much, but never became unconscious until she died. On making a *post-mortem* a piece of umbrella wire was found right through the ileum, twisted at one end, and was only removed with considerable difficulty.

I have not touched upon many important diseases, such as "parturient

apoplexy," although that undoubtedly is due primarily to the derangement of the digestive organs; but so much has recently been written concerning it and as it would occupy a paper itself I have purposely avoided it. I have not said anything about poisons, nor colic, nor chronic diarrhœa in cattle, which often defies our skill and power to relieve, nor white scours in calves, for my paper is already much longer than I intended, but I think I have said enough to give plenty of scope for a good discussion, so that some of us at least may derive some little benefit therefrom.

Let us all bear in mind that judicious dieting and good sanitary conditions with careful attention to details in treatment will materially assist our success in practice. "Remove the cause and the effect will cease" is a good axiom, but let us be careful that the animal does not slip through our fingers whilst the cause is being removed.

Discussion.

Mr. PRUDAMES said that before he made any remarks upon the able paper they had just heard read, he must say that they all felt very much obliged to Mr. Edgar for the care he had taken in bringing forward a subject so varied in its character. He (Mr. Prudames) could quite realise the difficulties with which Mr. Edgar had to contend, and that he could not possibly grasp so many points as he would like. It seemed to him (Mr. Prudames) that not one but a number of papers were requisite to deal comprehensively and effectively with the digestive organs of animals of the importance of the ox. One point raised by the paper to which they had just listened opened up a field for discussion of a character that was not possible on that occasion. He had listened to hear some account of that species of dyspepsia which was commonly known as spitting, or spueing the cud. He agreed fully with the essayist in his statement with reference to the amount of moisture required for cattle. It was undoubtedly the very best plan with all feeding cattle to allow them to have water by them *ad libitum*, so that they might drink whenever they required. He had known instances where feeding cattle deprived of water had developed dyspepsia, which was entirely removed when water was placed accessible for their use; and the owners' apprehension that the beasts would drink too much and make themselves ill had proved groundless. He could not, however, agree with the essayist when he said that in all these cases all the stomachs were more or less affected. He (Mr. Prudames) had never yet witnessed a case of the impaction of the abomasum. He had noticed many cases of the impaction of the omasum, and even the first case quoted by the essayist from his brother seemed to prove that there might be such a thing as impaction of the omasum alone. The essayist spoke of vomiting not being frequent. No, it was not. At the same time one met with such cases occasionally, and Mr. Prudames thought that several of them which he had chanced to come across might have been due to some poisonous agent. Cattle had a very peculiar habit of doing most extraordinary things. He spoke of country cattle, with which he was more familiar. He knew of instances where manure having been brought from chemical works in the neighbourhood of London and deposited in a cattle-yard in the country, cattle had undoubtedly taken some of this manure, and the result was acute indigestion accompanied with vomiting. With respect to another point: he failed to see the necessity of passing the probang twice or thrice in cases of choking if they were perfectly satisfied—which in ordinary circumstances they were—that they had removed the obstruction at the first attempt. He had also found, practically, that it was very rarely necessary to come to the last resort and have recourse to the trocar; that as a rule they could, with the exercise of a little patience, allow the gas to escape sufficiently for their purpose by means of the probang. In that he endorsed what their essayist said. Let them use the probang by all means, and withdraw the stiletto, and repeat the withdrawal of the stiletto

until sufficient gas had escaped to admit of the medicinal agents having their full effect.

Following the line of thought in reference to medicinal agents that had been already foreshadowed, he was of opinion that an aperient was good, but it must not be too much in quantity, and it must be followed by what was still more important, a nerve tonic. He attached great importance to a nerve tonic in cases of impaction, particularly of the cow, and, he might also add, of the dog. He had seen wonderful results from it. He could not quite agree with the essayist when he deprecated external pressure, because he (Mr. Prudames) had met with cases where, by a little moderate pressure, he had been enabled to pass on the obstruction. He would not carry pressure to excess, but a little moderate pressure in certain cases he thought desirable.

Those chronic cases ot tympanitis, of which mention was made, were very unsatisfactory. He had had experience of several, and had never been able to thoroughly clear up some of them. Of course, if there was a foreign agent in the case, that might account for the symptoms. It occasionally happened that in making a post-mortem examination, he had discovered the presence of a foreign agent, which operated to produce indigestion each time the rumen was full. He knew of two or three cases where a nail passed out of the rumen as far as practical, the head of the nail remaining within, so that when the rumen was full, the point of the nail pressed between the intercostal spaces, causing pain and tympany.

He had rarely met with the peculiar affection of the mammary glands, to which reference was made, as occurring in almost all cases of grain sickness. In cases with which he was familiar, grain sickness did not occur, because deleterious grains and things of that sort were not used, but they got constant cases of indigestion from other indigestible materials. In these instances, however, there was seldom any interference with the mammary glands beyond the loss of milk. He rather hoped to have heard from their essayist some reference to special diseases, those of the reticulum for instance, but inasmuch as Mr. Edgar told them that dyspepsia, or indigestion, or disease generally, involved each or the whole of the stomachs, and that it was difficult to diagnose one from the other, he (Mr. Prudames) could easily understand why the essayist did not take each seriatim, and give them any information with reference to any special matter. A short time ago Mr. Prudames met with a case (he regretted that it was not practicable for him to bring a specimen there) of disease of the reticulum, which he could only explain on the hypothesis of the animals having eaten frozen sweeds, because the reticulum was alone affected, but to such an extent as he had never witnessed before, except when there had been a foreign agent present. The description given by the essayist of pericarditis, induced by foreign agents was verified in his (Mr. Prudames) experience. He had met with many such cases, and each case proved fatal. One very marked point in connection with those cases was the extreme fœtor of the material—he hardly knew what to call it—in the pericardial sac. It was a mixture of vile fluids. He could scarcely give it a name.

Mr. ROWE stated that he had been called upon to treat horses from Regent's Park, which were suffering from indigestion and temporary derangement through eating frozen carrots, and his remedy was a simple one—warm ale. Many coachmen, we know, had recourse to this treatment last winter, and to a nerve tonic. (A voice: strychnine in some form?) No, we always used tincture of nux vomica, five drops to the dose, seldom less for the dog.

Mr. S. VILLAR said that Mr. Edgar in his clever paper had introduced a pleasing novelty to that Society. He said "novelty" because cattle pathology and the Central Veterinary Medical Society were almost strangers to each other. He believed that cattle pathology, however, was daily assuming more

importance in the veterinary profession, and that they all ought to know much more about it than they did. Mr. Edgar had dealt with what was perhaps the most important of all the phases of cattle pathology; he had treated on diseases of the digestive organs of cattle and, except perhaps, tuberculosis. Mr. Villar was of opinion that all other diseases combined did not cause so many deaths amongst cattle as diseases of the digestive organs. The subject which Mr. Edgar had introduced was a very wide one, and as Mr. Prudames said, it would afford them material for discussion on several evenings. Hence with regard to the lateness of the hour and to the importance of the subject, he moved that the discussion be adjourned until the next meeting of the Society if that was agreeable to Mr. Edgar.

The CHAIRMAN: Will you undertake to continue the discussion if your proposition is carried?

Mr. VILLAR: That is, I believe, the usual course when one moves the adjournment of a discussion at this Society; and I shall be very pleased to do my best.

The CHAIRMAN: Mr. Edgar, will you agree to the postponement of further discussion? I may say that Prof. Macqueen expressed a wish that the discussion should be adjourned as he and other gentlemen have been obliged to leave in order to attend a meeting held to-night on the subject of stamping out glanders. That meeting, too, accounts for the paucity of the attendance here.

Mr. EDGAR signifying his acquiescence in the adjournment of the debate, Mr. MAHON seconded Mr. Villar's motion which was carried unanimously.

Votes of Thanks.

The CHAIRMAN: I do not think that we ought to disperse without according a hearty vote of thanks to Mr. Rowe and to Mr. Edgar for the very interesting *post-mortem* specimens which they have brought before us to-night. I have much pleasure in moving a vote of thanks to those gentlemen.

Mr. STAPLEY seconded the motion which was carried *nem. con.*

Mr. ROWE and Mr. EDGAR having briefly acknowledged the vote, the meeting terminated.

H. G. ROGERS, *Hon. Sec.*

The usual monthly meeting of this Society was held at the Royal College of Veterinary Surgeons, Red Lion Square, on May 4th. Mr. W. Roots, the President, occupied the chair, and the other Fellows present were Messrs. W. F. Barrett, A. L. Butters, M. Clark, Henry Edgar, J. S. Hurndall, W. J. Mulvey, F. C. Mahon, Professor Macqueen, James Rowe, Wm. Roots, H. G. Rogers, Veterinary-Captain Raymond, F. Samson, Professor Shave, F. W. Willett, Fitzwilliam Wright, W. Willis and Sidney Villar. Visitors; F. Matthews, A. J. Protheroe and W. W. Scales.

"SOME DIGESTIVE DISEASES OF THE OX."

Resumed Discussion.

Mr. S. VILLAR: It would be impossible for me to treat Mr. Edgar's paper in an exhaustive manner. The ground covered by a paper with such a title as the one under our consideration this evening has so wide a range, that I have a feeling almost of dismay in attempting to re-open the discussion, and I am at a loss where to commence. Early in his paper our essayist points out that the most serious effects produced by any or all of the diseases of the digestive organs are mainly confined to dairy cattle, and a little farther on he says that we find that most of our cases occur in connection with the stomachs. With these two statements I quite agree. He further says that the two primary causes in almost every case of derangement of the digestive

organs are insufficient supply of water and temporary paralysis of the walls of the rumen, and throughout his paper, Mr. Edgar confines his remarks almost entirely to abnormal conditions of the stomachs and œsophagus. Whilst quite admitting the position of very great importance which diseases of the stomachs of ruminants occupy, I think there are conditions of the bowels, abnormal conditions of the liver, diseased conditions of the mesenteric glands, parasitic and other diseases, apart from the stomachs, which cause great mortality amongst cattle, and which appear to require more than passing notice in a paper dealing with the principal diseases of the digestive organs.

Mr. Edgar regards dyspepsia, plenalvia and impaction of the rumen as different stages of the same disease, but surely we get cases of dyspepsia apart from impaction of the rumen. In treating of impaction of the stomachs our essayist thinks that in all severe cases of impaction all four stomachs are involved; I, personally, have no doubt that in all cases of so-called impaction of the rumen the first three stomachs are implicated. Not so readily can I agree that these severe cases of impaction usually occur when cows are first brought into stalls, kept without exercise and a considerable quantity of forcing food is given. Although when a cow is newly put on a diet containing a large proportion of brewer's or distiller's grains, she is apt to eat ravenously, and to so distend the rumen as to give rise to impaction and indigestion, such cases are usually readily amenable to treatment. For obstinate and fatal cases of impaction, commend me to in-calf dry cows, such as are placed in a straw yard, or fed on poor hay or other innutritious diet, with the intention of keeping them in low condition for calving. Such cows being often in a weak state from their previous artificial forcing whilst in milk, and having a big fœtus inside them, will get impaction of their stomachs from which recovery is almost impossible. In-calf cows also appear often to have depraved appetites, and will eat the most mouldy and bad conditioned food they can find.

Special diseased conditions of the reticulum are undoubtedly rare. Mr. Prudames at our last meeting mentioned an interesting case. In my experience, disease of this stomach has been entirely due to the presence of foreign bodies which, by puncturing its walls and causing irritation, have brought about adhesions between the reticulum and diaphragm.

Mr. Edgar is of opinion that it is impossible to associate a particular set of symptoms with disease of the omasum. With this I agree. For several years I have been sceptical as to the existence so frequently as is generally supposed, of impaction of the omasum pure and simple. "Feck-bound," as it is known in Middlesex, is by some considered to be of very general occurrence. In the course of several post-mortems of animals which during life have shown those symptoms that are usually looked upon as diagnostic of impaction of the omasum, I have found the omasum and its contents apparently normal, but the anterior part of the small intestine and the walls of the abomasum in a markedly inflamed condition, and this leads me to suppose that impaction of the omasum alone is rare but undoubtedly it does co-exist with impaction of the rumen. I have found those cases of impaction, refusal to eat or drink, unwillingness to lie down or to rise if down, associated with a painful grunt and slight tympany which are said to arise from impaction of the omasum, most readily yield to treatment with large doses of aloes, which from the known physiological action of that drug points to the seat of the mischief being intestinal. Mr. Edgar, in alluding to the grunt of indigestion, says it may be readily mistaken for the grunt of pleuro-pneumonia, but the temperature must be our great guide. Now I submit that the thermometer, as a means of distinguishing between disease of the digestive apparatus and pleuro-pneumonia is of no use. In diseases of the digestive organs, we often get tem-

peratures of 104°, 105° and even 106° F. whilst in pleuro-pneumonia an animal, though badly affected, will at some period within a space of 24 hours probably have a temperature as low as 103°.

Another point which I very much question, although our essayist lays great stress upon it, is whether mammitis and loss of one or more quarters of the udder, frequently arise from impaction of the stomachs. He tells us he considers the condition known as grain sickness, maw bound, or impaction one of the most serious diseases because it not unfrequently ends in the loss of one or more quarters of the udder. Now, although I quite agree that the quantity of milk produced from the whole udder is much reduced or perhaps in very severe cases of impaction entirely suspended, I cannot think there is that sympathy between the stomach and mammary glands which Mr. Edgar evidently assumes. In cases of impaction there is a loss of appetite for both solids and liquids, rumination is suspended, pyrexia present, and the secretion of milk, with the other secretions is temporarily diminished; but there is usually no mammitis. My experience is that when we have mammitis and indigestion the mammitis precedes the indigestion, such indigestion being probably due to the animal taking food into the rumen after the digestive functions are depleted by the febrile condition of the cow, and when rumination is almost suspended from the pain caused by the inflamed udder. My idea is that indigestion and partial impaction follow mammitis, not that they cause it. Like the essayist, I have found paralysis arising from overloading of the abdominal cavity—dyspeptic paralysis he calls it—of frequent occurrence. I take this condition to be due to the contents of the stomach and uterus pressing on the posterior aorta, as it mostly occurs in cows far advanced in pregnancy and is usually relieved by a smart cathartic or by the birth of the calf.

Traumatic pericarditis is a frequent disease in the suburbs of London. So much rubbish and waste material is shot on the pastures that cattle have great facilities for eating wire, nails, &c. It would be interesting to know what length of time may elapse between the eating of, say a piece of wire, and its puncturing the pericardial sac. In one case within my own cognizance I think it occurred within five days. Among other things the quality of food would probably influence the time occupied. An animal suffering from traumatic pericarditis will evince great pain and aggravation of the symptoms for a few hours after partaking of hay or solid food. I look upon this constant recurrence of severe symptoms after feeding as of great service in assisting diagnosis in the earlier stages of this fatal condition. Slight tympany also appears to be usually present. Mr. Edgar does not mention the severe cases of dyspepsia which arise from the eating of placental remnants. The most frequent cases of vomiting I have ever seen were in young calves improperly weaned. The cowmen give them too much milk at one time and then they have too much hay at another time and they frequently vomit material which emits, to put it mildly, a very penetrating odour.

Mr. Edgar told us it was necessary to pass the probang more than once in choking. Well, I have had a good many such cases, and I never found it necessary to pass the probang more than once. He also tells us that the symptoms in the ox are liable to be much worse than those in the horse. I have never found it so. I have known two or three cases of a horse dying from choking, but never one of a cow so dying; and when I receive a message that a cow is choking, I do not hurry myself. I rather like to let the cow be for a while to see what nature will do. Instead of giving ol. lini, I usually give a small quantity of solution of ext. belladonna. I think it serves to lessen the spasm of the œsophagus, and the foreign body which produces the choking is then more easily passed. Mr. Edgar relates some very interesting cases in

seven months old calves. These calves were fed upon highly nutritious pasture, very rich land I take it. Two of them were found very suddenly dead, and another was discovered in a very bad condition. He was good enough to give us a description of *post-mortem* appearances, and he asks what may be the cause of death. Now I take it from the fact of his having made the autopsy that he knows more about the cause of death than any of us are likely to know. He points out marked congestions, extravasations and effusions into various parts of the body. From reading his description I am rather inclined to think that the disease from which these calves suffered was anthracoid in character.

He also mentions several cases which he calls malignant catarrh. Now the idea of malignant catarrh is associated in my mind with a very different complaint. True, we do not see many cases, but I have seen two in my lifetime; young bullocks which have suffered from what is known as malignant catarrh, and in which the disease has proved rapidly fatal. In each of Mr. Edgar's cases the animal recovered. I have not seen many lesions in the Schniderian membrane apart from that inflammation and ulceration which sometimes occur through careless cowmen in giving drinks. They get hold of a lot of ginger or cayenne pepper and pour the drink down the cow's mouth as if it were a sewer. The cow naturally coughs, and some of this liquid returns through the nostril, and soon very great irritation is set up from this cause. Mr. Edgar goes very fully into rumination. I shall not enter into that part of the subject myself, but simply point out two very interesting facts which came within my own knowledge.

Mr. Edgar said that the contents of the rumen were always in a markedly fluid condition, or should be so. Well, last year I was called in to see a Dutch cow which was suffering from stricture of the terminal portion of the œsophagus. She should, I know, have been fed on bran, but there was no chance of getting bran where she was, and the poor beast was obliged to have hay. She ate, and filled her œsophagus until she could get no more into it, and she belched the food up already partially masticated, and in the course of the day half-filled her crib several times over. Although the hay was very dry and there was no water within her reach, this food was completely saturated with saliva, as I took it; and it struck me then that the quantity of saliva secreted by a cow must be something enormous. The other fact I wish to mention is with respect to the omasum. I do not know what its function may be. Probably it is what Mr. Edgar described it to be. I had an opportunity of making a *post-mortem* examination in the case of a two-year-old cow which was quite fat, and weighed 76 stone—perhaps more—and I discovered that she had no leaves at all in her omasum. Her omasum was a plain bag, covered with small papillæ except at the anterior opening, and there the papillæ were large and arranged in lines. One could quite distinctly trace the lines where the leaves of the omasum should have been.

Both Mr. Edgar and Mr. Prudames have pointed out the great benefit to be derived from the use of nerve stimulants in impaction of the bowels, or rather stomachs of the ox. I have found them of very great service myself, but no one has alluded to the very great use for the same purpose which we can make of what I may call "stomachics." By that I mean ginger and spices of various kinds. There is a very old-fashioned notion in the country I come from, that directly a cow begins to get better, one should give her spices. The reason is that by flavouring the contents of the rumen, you induce the cow the more readily to chew her cud, and, unless she does this, the functions of digestion will probably not be carried on properly.

I have nothing more to say, except to thank Mr. Edgar for his interesting paper, and I think the veterinary profession owes him thanks as well for pointing out that within the metropolitan district 10,000 milk cows require in

some way or other the services of veterinary surgeons. I had no idea before that there were so many in the neighbourhood.

Mr. A. L. BUTTERS said that although he had not had the pleasure of hearing Mr. Edgar read his paper, he had the pleasure of reading it; and there was just one or two points on which he (Mr. Butters) would like to make a few remarks. First with regard to malignant catarrh, he said he had seen several cases, but the cases which had come under his notice had a certain amount of ulceration of the Schneiderian membrane, discharge from the eyes running down and scalding the cheeks. The appearances, in fact, put one in mind of cattle plague. They resembled that more nearly than anything else. There was a fetid, stinking discharge from the nose as well as the eyes, also diarrhœa of a very offensive character. He did not know exactly the cause of the disease which was not difficult to diagnose, but his impression was that the disease was rare, and that they had not yet arrived precisely at its pathology. The post-mortem appearances showed generally intense inflammation of the mucous membrane of the nostrils, of the head, and also a certain amount of bronchitis, and occasionally more or less inflammation of the bowels. As to choking, he had seen several cases of choking in cattle, in which the animals showed signs of rapidly dying, and no doubt death would speedily have resulted if relief had not been afforded by passing the probang, or using the trocar. The use of the latter instrument was sometimes of great service in giving relief, and it also allowed time for the obstruction to be removed naturally. The probangs generally used were rather small. A good large probang with a good sized, deep cup-shaped extremity, dilated the œsophagus to the fullest extent, and was less likely to cause any rupture of the œsophagus when passing it. The smaller probang was more likely to catch the side of the obstruction, and go through the walls of the œsophagus. As Mr. Edgar said, that form of disease was becoming rarer and rarer, owing to the cutting up of the roots given to cattle. Had Mr. Edgar ever administered medicine to cattle in the shape of balls? In cases of chronic tympany he (Mr. Butters) had seen very good effects follow from the administration of ginger and spices as mentioned by Mr. Villar, and carbonate of ammonia given in the shape of a large ball, which passed directly into the rumen, and, when this was soft, it seemed to stimulate that organ to perform its function in a healthy way. Stimulants thus given seemed to act more readily than when administered in the shape of drink. He thanked Mr. Edgar for his very excellent and practical paper, which was interesting in a great many ways, and he (Mr. Butters) only wished he was better able to criticise it.

Mr. F. G. SAMSON said that during the course of his practice he had known two cows die through eating placental remnants. While cows in calf turned out on commons and in parks frequently eat the placental remnants with impunity, the result was different and very serious in the case of cows stored up, kept in boxes or farm yards. Had Mr. Edgar noticed this, and if so, he should like to ask him to what he attributed the difference. In cases of impaction, Mr Samson said he had not perceived that the udder was so much affected as Mr. Edgar remarked. He (Mr. Samson) had had a cessation of milk from each and every quarter but he had not found that one quarter became affected as the result of impaction.

Capt. RAYMOND: What is the injurious result to a cow from eating the placental membranes?

Mr. SAMSON: Acute indigestion. In a case at Richmond I had a suspicion that the cow had eaten the placental membranes. The cowman denied that such was the fact but the dung hill was dug and very little of the placental membranes could be found. Hence my suspicion was confirmed, and when four or five days afterwards the cow died and a *post-mortem* examination was

made, I discovered the remains of the placental membrane in the rumen not digested at all.

Mr. W. F. BARRETT said that with a view to continuing the discussion he desired to make a few remarks. He laboured under the difficulty of not having heard Mr. Edgar's paper. He was sorry that he was unable to attend the previous meeting of the society. He knew that Mr. Edgar's experience in cattle diseases was considerable, and he had no doubt that that gentleman brought forward many interesting facts. He confessed that he had not read Mr. Edgar's paper, but there were a few remarks made by Mr. Villar to which he should like to reply. First as to relations between indigestion in cattle and mammitis; he had had considerable practice in the country but he could recall no case where mammitis followed upon indigestion in a cow, and he hesitated a great deal before saying that mammitis was a secondary condition following upon indigestion. He could quite understand that disease of the one organ might affect the mammary gland, that there might be some nervous connection between them, but his experience did not lead him to that result. In no case had he seen mammitis follow on indigestion in the cow, except there was some special cause to account for the inflammation of the mammary gland. He thought that Mr. Villar was wrong in regard to his view as to the temperature observed in bowel and stomach disorders. When an ox suffered from plenalvia it was a rare and unusual thing to observe any marked elevation of temperature. As the case progressed, however, as the animal powers became weaker, there was sometimes a rise of temperature and the thermometer would guide them very much in diagnosing pleuro-pneumonia from acute indigestion in the ox. It was curious that with regard to each and every disease of domestic animals veterinarians thought differently. Recently in regard to firing, while two or three veterinary surgeons affirmed the beneficial effects of that operation, others asserted that no good resulted from it, and some even were of opinion that the practice was harmful. So opinions differed in respect to diseases of the stomach and bowels of the ox. One set of veterinary practitioners asserted that cows vomited and another held that they did not. Personally he had never in the course of considerable country practice seen vomition in a cow. He did not think a cow vomited but occasionally. He agreed with Mr. Villar as to choking. He (Mr. Barrett) never witnessed a cow die of choking. When a cow died from distention of the rumen he thought that was always due to disturbance in the rumen itself. When cows were supposed to be choking he considered that it was often best to leave them alone and they would right themselves. When one was called to cases of choking it was best to make sure that the mischief was in the œsophagus, and that it did not abide in the rumen itself. He remembered that when he was at college that the disease called malignant catarrh was very frequently discussed by the teachers, and the pupils were told that this was rather a common disease as affecting cattle. Personally he was rather dubious about the prevalence of this malignant catarrh of which so much was heard. That the cattle did get catarrh was not to be denied, and that they sometimes contracted acute catarrh was a point not to be debated, but that an animal rapidly died from the effects of malignant cold in the head was a point open to great controversy. Personally he did not think cattle often died from this complaint. Instead of being named malignant catarrh it should be described as acute specific fever in which the symptoms were acute catarrh of the head. In those cases in which death ensued they would find by using the thermometer that the temperature was very high, 105°, 106° or 107° F. Death was really due to the febrile attack of which the local catarrh was merely an accompanying feature. He was of opinion that the in-calving cows did eat the placental membranes, but that the results were not as a rule serious, unless the membranes were decomposed, or the cow unhealthy. Unless these conditions

were present he did not think septicæmia very often followed. When an animal got dyspepsia through eating placental membranes, he did not think septicæmia and those febrile conditions of which they heard so much, often followed. In many cases when death occurred shortly after the eating of placental membranes, he thought, if they carefully examined into the cases, they would find some septic absorption from the uterine walls had arisen, or that the animal had succumbed to some other disease. As to the special nature of the diseases to which the cow's digestive apparatus was liable, he thought the rumen was mostly at fault. One heard of impaction of the third stomach, of the inflammatory conditions of the fourth stomach, and one heard occasionally of the congested and inflammatory of the bowel of the ox, but his experience was that in 50 per cent. of the cases in which veterinary surgeons were consulted, the seat of the mischief was in the rumen, and that the mischief was not of an inflammatory character but was mostly due to the animal having partaken of too large a quantity of succulent food, or food of too dry and unassimilable a character. He believed that inflammatory conditions of the stomach in an ox were exceedingly rare, and that the colic and spasmodic affections of the bowels which was common in the horse, was very seldom met with in cattle practice.

Mr. J. S. HURNDALL remarked that there was a great advantage in their rising to express their opinions if Mr. Barrett's idea was the correct one, namely, that everyone held a different view to that of his neighbour. They might congratulate themselves, however, that they as a profession were not alone in this, for if they read medical literature, they would find medical men were as much at variance one with another as were veterinarians. But, of course, the question arose in one's mind: why was it that there was such a very great difference of opinion. He could answer the question, but he would not do so that night, as it devolved upon him to read a paper next month and he should have occasion to make a few remarks that would probably bear upon this subject. In matters of everyday life he generally agreed with his friend Mr. Edgar, but in respect to some of the ideas exposed in his paper he (Mr. Hurndall) must say that he held somewhat different views. At the same time he could not but bear in mind the immense amount of practice which Mr. Edgar had had—and also Mr. Villar in dealing with cattle generally. He did not presume to say that he could put his experience against that of either of those gentlemen, although when at Liverpool he had a fair share of cattle practice. Mr. Edgar seemed to him to deal with the four divisions of the stomach as if each was really a stomach of itself. Now he (Mr. Hurndall) regarded the rumen, the reticulum, and the omasum as being part of the œsophagus, and not part of the stomach at all; and hence he asked himself the question: how could they speak of the dyspepsia of any one of these three divisions? If he understood the word dyspepsia aright it meant a want of pepsine. Well, if there were no glands—as he believed there were none—either in the rumen, reticulum, or the omasum, he failed to see how there could be any pepsine secreted; and they did not come to pepsine or any digestive materials provided by the glands until they arrived at the abomasum. Therefore how could they speak of dyspepsia? Hence also, as to the subject with which Mr. Villar dealt and with regard to which he gave them the advantage of his experiences, he was at one with him in his contention that mammitis preceded indigestion. Mr. Edgar, in his paper, suggested that mammitis followed indigestion. Now he (Mr. Hurndall) had always understood and found that mammitis was a disease *per se* which originated in the mammary organs, probably through cold and exposure of some sort causing inflammatory products to be thrown out, and the general process of inflammation went on until one or more of the quarters, at all events, were rendered useless for the time being. Now he had found, as Mr. Villar had done, that when cows

had what he regarded as mammitls pure and simple, there had been a deal of indigestion which had seemed to succeed the disease. At any rate the cows were off their food and an amount of tympany had followed but that had not ensued until there was distinct evidence of inflammation of the mammary organs? If Mr. Edgar's theory or experience were correct, he would ask him whether he would treat the indigestion or the inflammation of the mammary organ, would he treat the latter, supposing the inflammation of the mammary organ was preceded by the indigestion? Mr. Hurndall understood that Mr. Edgar would do nothing towards relieving the mammitis but if the indigestion followed the inflammatory process in the mammary organ then, he took it, the indigestion would, in the ordinary course of events, be overcome and cease to trouble. This was one of the things arising out of the paper that suggested itself for discussion. Mr. Edgar deserved the thanks of that society, and personally he (Mr. Hurndall) tendered ihm his thanks for having involved himself in so much work in the preparation of the paper with which he had favoured the association. From that paper they had gained information as to the number of cows supposed to be in milk in London. This went to prove that there was plenty of work for some of them in London, whether they got it or not. If they did not get it perhaps it was because the milkmen had discovered, as Mr. Barrett said, they were at such variance in opinion amongst themselves that their service was not worth much. (Laughter). One other word. When the case was a true case of indigestion in a cow he had found vegetable charcoal given in volume prove an exceedingly good remedy. It seemed to absorb a large quantity of the gases that appeared to be formed, as he thought, in the mucous membrane of the rumen. He had found it a very useful agent.

Professor MACQUEEN said that until Mr. Barrett spoke he did not think he should have had anything to say on the occasion save to compliment—if he might do so—Mr. Edgar upon the excellence of his paper. The paper was an innovation that they should highly value. As London practitioners they might not perhaps have so much interest in cattle practice as in other branches, but it was, he thought, good for them all to renew their acquaintance with the diseases of cattle. His first remark would be with regard to choking. Opinion was divided, it seemed, concerning the effects of choking in cattle. Some regarded choking as fatal, others as nearly fatal, and others again as of comparatively little consequence. Well, in his experience choking in cattle was a more urgent condition than choking in the horse. As to Mr. Villar's remark that he never hurried himself when called to attend a choking cow, he might hasten to a choking horse and yet do less good than he could if he were present with a choking cow. The practical outcome of the objection was this; that choking in the horse was scarcely so urgent, he thought, as choking in cattle. He held that one of the causes of the symptoms in choking was the passage of saliva down the animal's wind-pipe, and hence the use of a piece of wood as a gag placed across the mouth between the teeth to keep the mouth open. It prevented the animal from swallowing and precluded the saliva from passing into the wind-pipe. As to the passage of the probang, he believed with the essayist, that the probang had frequently to be passed more than once. When an animal—even a horse—recovered from choking, it was not rare to find the horse showing symptoms of choking after the removal of the obstruction. The irritated œsophagus seemed to suffer a recurrence of spasm, and the animal stood affected as he was in the first instance. In cattle there was no doubt that the probang required to be passed sometimes to relieve recurring tympany. Now with regard to tympany, he believed in the use of the trocar. There was a difficulty, however, when one was called to ten or twelve cows all simultaneously affected with tympany, in passing from one to the other quickly enough with any instrument in order to afford relief and save

life. Some fatal cases in such circumstances inevitably occurred from delay. Mr. Edgar referred to the operation of ruminotomy, and found that it was not often performed in this country. He (Professor Macqueen) did not think it was often performed in this country. It was performed occasionally, but the results were not always favourable. In his experience the result depended largely upon the age and condition of the patient. He did not think it was advisable to perform ruminotomy in an old cow, or a cow that had given milk, say for four or five months. If the cow was in the condition of indigestion necessitating the operation of ruminotomy, she would not repay the trouble of the operation. They might recover the case by the operation, but the cow would not return a sufficient supply of milk to pay for her keep. Mr. Edgar referred to some difficulty in keeping food from passing into the peritoneal sac, that he (Professor Macqueen) did not consider a very great difficulty provided the stomach was sutured to the abdominal wall, which should be done very early in the operation. With respect to the appearance of mammitis, he agreed with the essayist in regarding indigestion as a frequent cause of mammitis. It was one of the commonest causes of mammitis; and, although some gentlemen were inclined to submit that mammitis preceded indigestion, he still maintained the opinion he formed some years ago, that indigestion was a very common predisposing cause of the mammary trouble. With regard to temperature being any use in diagnosing or in distinguishing abdominal affections from lung affections, he agreed with the opinion expressed by Mr. Villar. In abdominal affections in the ox they had a rise of temperature frequently, especially in acute indigestion; and he believed that, without paying particular attention to the condition of the lungs by auscultation, it was impossible to distinguish between a lung disease and acute indigestion. The temperature might assist them a little, and auscultation might aid, but very often there was great difficulty owing to the sounds produced in the rumen, which was so near to the lungs. As to cattle eating the placental membranes, until that night he was not aware that there was any danger in their doing so. It was, of course, not the rule in Scotland to feed cattle on placental membranes, and it was not a custom there to facilitate their getting at the placental membranes, but it was a common thing for cattle which calved in the field to eat the placental membranes without exhibiting any appreciable change. A placental membrane might pass to the rumen and there undergo decomposition, but certainly, as a rule, cows did not suffer from eating these membranes. Then as to cows vomiting—spueing the cud. Mr. Barrett said he never yet saw a cow vomit. Most people, however, who had experience in cattle practice must have noticed what was called spueing the cud. Even the force of ordinary rumination, the force by which the food was expelled by the œsophagus, was considerable. Concerning malignant catarrh, Professor Macqueen said that the symptoms of malignant catarrh—so far as he remembered them—had been well described by Mr. Butters. But Mr. Barrett appeared to think that there was no such disease in England. In some countries malignant catarrh was classed with contagious diseases, and was exceedingly fatal. There were two or three outbreaks on record of this malignant catarrh. It was a disease accompanied by high temperature, ulceration of the Schneiderian membrane, and various other changes in the head. A good deal might be said regarding what the essayist remarked concerning the action of the stomachs. Professor Macqueen thought Mr. Hurndall took what was considered the modern view of the functions of the cavities, namely, that the first three cavities were mere dilatations of the œsophagus, and that the fourth was the true digestive stomach, but there was one point which should not be forgotten, and that was that the innervation of these stomachs was far from being well known. It was a remarkable fact that the degree of innervation was greatest in the rumen, and least in the reticulum. The degree was estimated by following

the distribution of the œsophageal branches of the pneumogastric nerves. The chief nerves fibres of the rumen were found at the gutter and œsophagus. The second in order as regards nerve supply was the abomasum, the next the omasum, and the last the reticulum.

Mr. BARRETT: If you will pardon me a moment, I should like to make one or two assertions in reply to the remarks of Professor Macqueen. His remarks are pointed, and especially so when they are directed to previous speakers. I submit he has in two or three respects exaggerated what I said. I never wished the meeting to believe that the ox was incapable of ejecting food from the rumen. My point was that the ox seldom vomited in order to relieve a disease. Of course, I have seen oxen eject food from the mouth—all of us have. But I still maintain that an ox does not vomit when suffering from disease in order that the organ may get relief. With regard to malignant catarrh, Professor Macqueen has also misquoted me. I did not say that there was no such thing as malignant catarrh. I said that if one looked deeply into the cases so-called, he would find that their description as cases of malignant catarrh was not the true one, and that there was really an acute febrile condition probably of a contagious nature, and that the catarrh was a mere outcome of the fever, just as a rash on the skin was peculiar to small-pox or scarlatina in man. I omitted to thank Mr. Edgar for his paper but I do so now most heartily.

Professor MACQUEEN: I did not enquire at the time as to the cause of the expulsion of this material from the stomach. That was not my concern. At the same time, he gave me the impression at the time that he did not believe that the animal did vomit. He certainly said he had never seen it. I said, as I believe, that the animal did vomit. As to malignant catarrh, the objection taken by Mr. Barrett to the name is a mere hair-splitting objection. If the disease be, as it is, a malignant or high fever of which catarrh is a characteristic, what objection can there be to the name adopted in absence of a better. I fail to see the point of Mr. Barrett's objection. He objects to the term "malignant catarrh." (Mr. Barrett: "Yes.") And yet he fails to substitute any better name to denote this condition. If we have a high fever, a contagious fever, associated with discharge from the nose, I maintain that until we have a new nomenclature there can be no reasonable objection to the name "malignant catarrh."

Professor SHAVE said he should like at the outset of his remarks to thank Mr. Edgar for bringing that paper before the Association—a paper which had been very interesting to him. He also desired to thank Mr. Villar for his essay. Concerning malignant catarrh in the ox, he said he had only seen one case of the kind, and that just after he obtained his diploma, and so his experience in that matter would not go for much. The case occurred in a Devonshire town, and from the symptoms detailed in Professor Williams' book on medicine he had no doubt that the case was one of malignant catarrh. There was a profuse and bloody discharge from the nose, eyes and mouth, which began to stink before twelve hours had elapsed. The animal died, but he had no opportunity of making a *post-mortem* examination. In fact, not having seen a case like it before, he did not feel anxious to make an autopsy. He need not add that he believed thoroughly in the existence of malignant catarrh, and as for the name he thought it a very good one to describe such cases as had been detailed.

(*To be continued.*)

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting was held at the Blackfriars Hotel, Manchester, on Thursday, June 1st, at 4 p.m.

The president, W. A. Taylor, Esq., occupied the chair. There were also present—Professor Williams, Messrs. T. Greaves, Roberts, T. Hopkin, Meredith, Hall, Jones, Carter, Urmston, E. Faulkner, Woods, Crook, Packman, McKinna, Blackhurst, Curbishley, Kendall, Locke, Dacre, Shore, A. Leather, and J. B. Wolstenholme.

The SECRETARY nominated Mr. Harrison, M.R.C.V.S., of Bowdon, for membership.

Professor WILLIAMS then gave a most interesting address on "Reminiscences of Veterinary Practice." The professor related many of the theories respecting disease which were held at the commencement of his career, and described the methods of treatment then adopted, comparing the changes which had taken place in the views held, the treatment, and the results obtained at the present day. He made particular reference to shoulder and foot lameness, to poll evil, mange, bowel affections, periodic ophthalmia, lymphangitis, pleuritis, pneumonia, glanders, and tetanus.

The President, Messrs. Greaves, Hopkin, Woods, and Faulkner, spoke on some of the points raised by Professor Williams.

In conclusion, a hearty vote of thanks was accorded Professor Williams.

JNO. B. WOLSTENHOLME, *Hon. Sec.*

ROYAL (DICK'S) VETERINARY COLLEGE, EDINBURGH.

ON May 11th, the annual distribution of medals took place in the lecture room of the College, Bailie Steel presiding.

In opening the proceedings, the CHAIRMAN congratulated students and staff upon the successful session through which they had just passed, and pointed out that more students had matriculated this year than last. He had also to state that one of their students, since they last met, had won the Fitzwygram prize of £50.

Principal WALLEY, on behalf of the teaching staff, said that they were quite satisfied with the progress of the institution, the position it now occupied being much superior to that of a few years ago. He then referred to the various donors of medals, remarking that though their college was not so favourably situated or so wealthy as several sister institutions (medical, &c.), yet he was glad to see that there was an awakening interest in their profession.

The prizes were then distributed to the successful students. The following is the list of medallists:—

SENIOR CLASSES.—Veterinary Medicine and Surgery.—The Drybrough gold medal, Jas. Douglas Stewart, Sydney; silver medal, J. W. Mackintosh, Foss, Pitlochrie; bronze medals, Joseph Harry, Llanelly, North Wales; James H. White, Liverpool. Cattle Pathology, Helminthology, and Meat Inspection.—The Harris gold medal, J. D. Stewart; silver medal, Peter Wilson, Lanark; bronze medal, Alex. M. Trotter, Edinburgh. Veterinary Surgery and Obstetrics.—Gold medal, J. D. Stewart; silver medal, P. Wilson; bronze medal, J. W. Mackintosh. Clinical Medicine.—Silver medal (presented by Mr. W. J. Stockman), William Todd Elder, Dunfermline; bronze medal, C. Raymond Neale, Arbroath. Materia Medica.—Silver Medal, Joseph Harry; bronze medal, J. D. Stewart. Practical Pathology.—Silver medal, J. D. Stewart; bronze medal, W. T. Elder. The Bagnell Prizes (presented by Mrs. Bagnell, of Pau, for the best papers on "The Management and General

Treatment of Dogs.")—Gold medal, Osborne A. O'Neill, Ard Bough, County Dublin; case of instruments, J. D. Stewart. Certificates as Pharmacists and Clinical Assistants.—Alex. M. Trotter, Osborne A. O'Neill, T. J. Foulkes, J. D. Stewart, and W. J. Hamilton. Veterinary Medical Association Prizes.—Silver medal for the best essay of the session, J. D. Stewart; honourable mention, J. R. Slidders, Dundee. Silver medal for the best communication, Alex. M. Trotter. Certificate as secretary, C. R. Neale. The Dick Bursary of twenty guineas, J. D. Stewart. *Second Year's Students.*—Senior Anatomy—Gold medal, J. E. Young; silver medal, F. C. Mason; bronze medal, G. J. Furness and R. S. White; special medal, L. M'Laren. Physiology—Gold medal, F. C. Mason; silver medal, J. E. Young; bronze medal, A. Holborn and R. S. White; special medal, E. J. Furness. Senior Histology—Bronze medal, F. C. Mason. *First Year's Students.*—Junior Anatomy—Silver medal, W. E. Ison and W. Worthington; bronze medal, A. M'Clew, W. D. Rees, and F. G. Edwards. Botany—Silver medal, W. Worthington; bronze medal, W. E. Ison, J. W. Sinclair, and J. Watson. Chemistry—Gold medal, W. E. Ison; silver medal, W. D. Rees; bronze medal, W. Worthington, G. Moir, and F. G. Edwards. Practical Chemistry—Silver medal, W. E. Ison. Practical Botany—Silver medal, W. E. Ison.

Votes of thanks were afterwards given to the Highland Agricultural Society, the donors of medals, and the chairman.

NEW VETERINARY COLLEGE, EDINBURGH.

THE annual distribution of prizes took place in the New Veterinary College, Edinburgh, on May 17th. Principal Williams occupied the chair, and there was a good attendance.

The CHAIRMAN proceeded to distribute the prizes, remarking that his classes during the past session had been most orderly and well behaved. There were 190 names on the roll during the winter, which included both agricultural and veterinary students. The following were then presented with medals:—

Principal's Prize, for best first and second professional examination, M. Hutchinson; Pathology of the Horse, George E. Gibson; Pathology of the Ox, Sheep, Pig, and Hog, H. G. Bowes; Demonstration of Morbid Anatomy, H. G. Bowes; Practice, Geo. E. Gibson and J. J. Scott; Curator of Museum, W. A. Allott; Senior Anatomy, J. Spreull; Practical Anatomy, F. W. Hall and R. O. Moore; Physiology, W. Jowett; Histology, J. Spreull; Junior Anatomy, J. E. Hutchison; Chemistry, G. Barber and J. Mills; Botany, J. E. Mills. The Veterinary Medical Society prizes were won as follows:—Best essay, H. G. Bowes: best special essay, G. E. Gibson; best communication, W. Allott; veterinary hygiene (Principal's class), J. M'Kinnell; do. do. (Professor Owen Williams' class), W. S. Daine.

Mr. IVESON M'ADAM then presented Principal Williams with a gold chain in commemoration of the majority of the College, a silver salver on the attainment of his silver wedding, and an illuminated address testifying to the high esteem in which he was held by friends and members of the profession. In doing so he referred to the great work which the Principal had accomplished on behalf of veterinary science, remarking that he believed no man living or that ever lived had done so much for the alleviation of the sufferings of lower animals.

Principal WILLIAMS, who was received with loud cheers, thanked them most heartily for their gifts. There were occasions when a man's heart seemed too big for his body, and that was the feeling which he had at that time. He was sorry that his wife could not be present, as she was suffering from deafness, and was under treatment by a Brighton specialist, but she had

sent a telegram to say that her heart was with them. Going on to speak of his reason for establishing the New Veterinary College, he said that when in Dick's College he threw his whole heart into the work, bent on making the institution worthy of its founder, and second to none in the world. He felt that he had a mission to fulfil, and meeting with considerable opposition, he had started the new college, which he thought he could say, after twenty-one years' experience, he had made successful.

He had set himself to the reforming of certain things in the veterinary profession, and abolishing cruelty, which was now and would be more and more looked upon as reprehensible. He had to fight the battle alone, as they were aware, for a quarter of a century, and he thought he could say he had crushed a universal system of counter-irritation which had been in vogue ever since he was quite a boy. He had seen thousands of horses crushed by it, and he appealed to them as to whether his results did not justify what he taught them. That was one thing he had effected, and he was almost certain that in ten years he will have effected what he had lived long enough to see so far completed. Death came, and death would come to everything living, but there was a difference between natural death from a disease and death from the result of artificial treatment. He had a profound respect for his late teacher, Professor Dick, for whose institution he had also great reverence. Speaking of members of the profession, he said that the pioneer of veterinary science was Mr. Barlow, who was a man living one hundred years before his time. The others were rule of thumb practitioners, while he brought the light of science to bear upon the profession.

Councillor HAY proposed a vote of thanks to Principal Williams for presiding, remarking that his knowledge was of great use to the Town Council.

The CHAIRMAN briefly acknowledged, and the proceedings terminated.

GLASGOW VETERINARY COLLEGE.

THE work of the session at this Institution terminated on May 12th, and on the 15th the oral examinations of the Royal College of Veterinary Surgeons were conducted within the Museum of the College. On the 22nd the candidates for diploma were also subjected to a rigid examination on horses, cattle, and sheep, selected and brought to the College for that purpose. The Board of Examiners included Dr. George Fleming, C.B., &c., London; Mr. J. Roalfe Cox, F.R.C.V.S., London; Mr. Duguid, F.R.C.V.S., London; Mr. J. Freeman, F.R.C.V.S., Dublin; Professor Hamilton, M.D., &c., Aberdeen; Professor McKendrick, LL.D., Glasgow; Col. W. B. Walters, F.R.C.V.S., Aldershot; Mr. T. H. Simcocks, F.R.C.V.S., Drogheda; Mr. Finlay Dun, F.R.C.V.S., Edinburgh; Mr. H. Olver, F.R.C.V.S., Tamworth; Mr. W. Woods, jun., F.R.C.V.S., Wigan; Col. F. Duck, F.R.C.V.S., Aldershot; Mr. James Clark, F.R.C.V.S., Cupar-Angus; Captain C. Rutherford, F.R.C.V.S., Aldershot; Captain F. Smith, F.R.C.V.S., Aldershot; Mr. John Malcolm, F.R.C.V.S., Birmingham; Professor J. R. Green, M.A., B.Sc., London; Mr. W. A. Taylor, F.R.C.V.S., Manchester; Mr. W. F. Peacock, F.R.C.V.S., Hyde Park; Mr. H. Somerville, B.Sc., London; and Mr. R. Rutherford, F.R.C.V.S., Edinburgh. There were also present, as *ex officio* members, Principal McCall, F.R.C.V.S.; Professors S. Cooke, F.C.S., William Limont, M.A., M.B., Thos. King, J. McIntosh McCall, M.B., C.M., M.R.C.V.S., T. A. Trotter, M.R.C.V.S., and W. S. Johnson, Secretary.

The following gentlemen passed the first (or theoretical) part of the final examination:—Messrs. R. Crawford, Greenock; R. Mason, Glasgow; J. Gillies, Glasgow; R. Ward, Southport, Lancashire; H. Davies, Swansea, Glamorganshire; H. McConnell, Armagh; F. W. Thomson, Formby, Lancashire; and R. Moore, West Bridgeford, Nottinghamshire.

The following gentlemen passed the second (or practical) part of the final examination, and succeeded in obtaining the diploma of the Royal College of Veterinary Surgeons:—Messrs. R. Mason; J. Gillies; R. Ward: H. McConnell; F. W. Thompson; R. Moore; A. McNairn, Newton-Stewart, Wigtownshire; and J. R. Robins, Alcester, Warwickshire.

The following students passed the "B," or second professional examination, viz., A. Main, Liverpool (G.C.); J. J. Gorman, Cardiff, Glamorganshire; J. Hill, Glasgow; J. C. Kyle, Port Glenone, Londonderry; A. Hart, Glasgow; D. Brown, West Kilbride, Ayrshire (G.C.); J. Paton, Perth (G.C.); M. White, Glasgow; T. C. Ferguson, Glenluce, Wigtownshire (G.C.); W. T. Blane, Belturbet, Co. Cavan; J. Paterson, Uddington, Lanarkshire; and H. J. Maxfield, Congleton, Cheshire (G.C.).

The following students passed the "A," or first professional examination, viz., H. H. Carlisle, Ballynahinch, Co. Down; R. K. Rutherford, Warwick; J. D. Gates, Glasgow; R. Mitchell, Glasgow; W. L. Cockburn, Dreghorn, Ayrshire; R. Rankine, Hamilton, Lanarkshire (G.C.); R. Miller, Strathaven; Lanarkshire (G.C.); W. Roy, Glasgow; J. Stirling, Kippen, Stirlingshire; J. McNeil, Greenock; M. E. White, Glasgow; and J. Eadie, Pollokshields, Renfrewshire.

Medals granted by the Highland and Agricultural Society of Scotland; the late Professor Allen Thompson, of London; and Principal M'Call; and certificates of merit were awarded in the different branches of study as follows, viz.:—

Horse Pathology. (Written examination.) Silver medal, H. McConnell; first-class certificates, R. Moore, F. W. Thompson and J. Gillies; second-class certificates, H. Davies, J. Magee and R. Mason.

Cattle Pathology. (Written examination.) Silver medal, P. J. Welch; first-class certificates, R. Moore and J. Gillies; second-classs ceriificates, H. McConnell and J. Magee.

Pathology and Materia Medica. (Written examination.) Silver medal, R. Moore; first-class certificates, H. Davies, J. Magee and J. Gillies; second-class certificates, F. W. Thompson, A. Walls, H. McConnell and R. Ward.

Practical Examination of Horses as to age, soundness, operations, etc. Gold medal by Principal McCall, J. R. Robins.

Practical Examination of Cattle and Sheep as to age, soundness, operations, etc. Gold medal by Principal McCall, R. Moore.

Senior Anatomy. Silver Medal, J. Gorman; first-class certificates, M. White, D. Brown and A. Main; second-class certificates, J. Dick, J. C. Kyle and A. Hart.

Physiology. Silver Medal, T. C. Ferguson; first-class certificates, D. Brown and J. Paton; second-class certificates, A. Hart, A. Main and J. Gorman.

Best Professional Examination in Anatomy. Gold medal by the late Professor Allen Thomson, Andrew Hart.

Junior Anatomy. Silver medal, R. Miller; first-class certificates, W. Roy, R. K. Rutherford, J. Rankine and J. G. Reynard; second-class certificates, W. L. Cockburn, H. H. Carlisle and J. Eadie.

Chemistry. Silver medal, M. E. White; first-class certificates, R. Miller, J. McNeil, J. Rankine and W. Roy; second-class certificates, J. Eadie, A. M. B. Sullivan, R. Mitchell and R. K. Rutherford.

Botany. Silver medal, W. Roy; first-class certificates, R. Miller, J. Rankine and M. E. White; second-class certificates, R. K. Rutherford, J. Eadie and H. Carlisle.

Principal McCall's Bursary of £20, or a gold medal the value of that amount, for the student who obtained the highest aggregate marks in the first and second professional examinations before the Board of Examiners, was awarded to Mr. James Paton.

ROYAL AGRICULTURAL SOCIETY.

At the monthly Council Meeting held on May 31st, Sir John Thorold reported that the Veterinary Committee, having considered the report of the Departmental Committee on Swine Fever, recommended that the following resolution be adopted by the Council and forwarded to the Board of Agriculture:—

The Council desire to express their entire agreement with the conclusions of the Departmental Committee on Swine Fever, and they trust that their recommendations may be carried into effect with the least possible delay.

The following report had been received from Professor Brown:—

Pleuro-Pneumonia.—Since the last meeting of the Council, there have been two outbreaks of this disease discovered in Great Britain. The first of these occurred near Barnsley, where cases were found among the nine cattle on the premises. The other outbreak took place at Hendon, on a dairy farm, where there were 145 head of cattle. In the course of slaughtering out these animals, ten cases of the disease were found.

Swine Fever.—In the twenty weeks ended May 20th, there have been 1,063 fresh outbreaks of this disease reported in Great Britain, and 5,244 pigs attacked. In the corresponding period of last year there were 790 outbreaks, and 4,906 pigs attacked.

Anthrax.—Since the beginning of the year there have been 183 outbreaks of anthrax reported, and 412 animals attacked. This is a very considerable increase over the returns for the corresponding period of last year, when there were 101 outbreaks, and 203 animals attacked.

Rabies.—This disease is still on the increase, three cases being reported in the week ending May 20th. There have been since the beginning of the year twenty-six cases recorded. as compared with nine in the corresponding period of last year.

Jurisprudence.

High Court of Justice, Queen's Bench Division, May 31st (before Mr. Justice Day and Mr. Justice Lawrance.)

ROYAL COLLEGE OF VETERINARY SURGEONS *v.* GROVES.

This was a case stated by two justices of the borough of Blandford, in the county of Dorset. On February 7th, 1893, an information was heard before the justices, stating that the respondent, Richard Henry Groves, of Blandford, chemist, not being on the register of veterinary surgeons, and not holding at the time of the passing of the Veterinary Surgeons Act, 1881, the veterinary certificate of the Highland and Agricultural Society of Scotland, did, on the 31st day of December, 1892, at Blandford, aforesaid, unlawfully use and take an addition and description stating that he was specially qualified to practise a branch of veterinary surgery, contrary to section 17 of the aforesaid statute. On behalf of the appellants, the Royal College of Veterinary Surgeons, it was proved that the respondent was not a member of the Royal College of Veterinary Surgeons, and was not on the register of veterinary surgeons, and did not hold a certificate of the Highland and Agricultural Society of Scotland. It was further proved that the respondent caused to be printed and circulated a book, upon the cover of which he described himself as "Pharmaceutical and Veterinary Chemist." The book contained a description of the symptoms and treatment of disease of horses, cattle, sheep, dogs, poultry, and game, and contained a notice that the price list of all the articles mentioned in the book would be found on the last page. On behalf of the appellants it was con-

tended that by so doing the respondent had infringed the 17th section of the Veterinary Surgeons Act, 1881. They argued that he had taken and used a name, title, addition, or description, stating that he was a practitioner of veterinary surgery, or some branch thereof, or was specially qualified to practise the same. The respondent contended that the book was only an advertisement of medicines prepared ready for sale generally to any person applying for them, and did not convey that the respondent was a practitioner of veterinary surgery or any branch thereof. Reliance was placed upon passages in the book in which the respondent recommended the public to consult veterinary surgeons in difficult cases. It was further contended that the art of veterinary surgery was a thing distinct from the sale of medicines. The justices, considering it a difficult question, dismissed the summons with costs, but, on the application of the appellants, stated this case for the opinion of the High Court. The question for the opinion of the Court was: Did the respondent, by using the title "Pharmaceutical and Veterinary Chemist," take or use a name, title, addition, or description, stating that he was a practitioner of veterinary surgery, or any branch therof, or specially qualified to practise the same? If the Court answered this question in the affirmative, the case was to be remitted to the justices for them to convict; otherwise the dismissal was to stand.

Mr. POLAND, Q.C., and Mr. COLAM appeared for the appellants, and argued that anybody reading the book would go to the respondent as being specially qualified to deal with the diseases mentioned in it. They relied on the use by the respondent of the word "veterinary," and cited "Royal College of Veterinary Surgeons v. Robinson" (1892) (1 Q. B., 557).

Mr. H. Bray appeared for the respondent, but was not called upon.

The Court dismissed the appeal.

Mr. Justice DAY said: I am of opinion that the magistrates were right. The charge is brought under section 17, sub-section 1 of the Veterinary Surgeons Act, 1881, which says that "if . . . any person other than a person who for the time being is on the register of veterinary surgeons, or who at the time of the passing of this Act held the veterinary certificate of the Highland and Agricultural Society of Scotland, takes or uses the title of veterinary surgeon or veterinary practitioner, or any name, title, addition, or description stating that he is a veterinary surgeon or a practitioner of veterinary surgery or of any branch thereof, or is specially qualified to practise the same, he shall be liable to a fine not exceeding £20." Now it is said that the present respondent has used a "title, addition, or description stating that he is a veterinary surgeon or a practitioner of veterinary surgery . . . or is specially qualified to practise the same." The evidence does not satisfy me that he has done anything of the kind. The book is a popular handbook, and suggests the remedies for certain diseases. He makes suggestions as to the best mode of treating the diseases. The book is quite harmless with reference to the statute. The book is devoted to the diseases of animals, and this is the subject open to anyone without obtaining these qualifications. In my opinion this is not in any way prohibited by the statute. Many persons publish books for the purpose of making money out of them. No doubt in this case the man thought it would bring people to his shop to purchase his nostrums. It is clear this is a work of the kind published by enterprising shopkeepers of the present day. They recommend things that they sell. That seems the object of this book. I do not see why, because this person has an object in publishing the book, he should be debarred from doing it, when if a person had no such object there would be no objection. I should infer from the words "veterinary chemist," that a man lays himself out for the preparation of remedies for horses, cows, beasts, &c. I do not see that because a man sells balls for horses he is practising veterinary surgery. You might as well say that a man who makes up

pills practises as a doctor. No doctor would say that a chemist who compounds medicines is practising as a doctor. Drugs are used by physicians for the purpose af treating diseases. The man is entitled to call himself a "veterinary chemist" in the sense that he prepares veterinary medicines. With reference to the case of "Royal College of Veterinary Surgeons v. Robinson," which has been cited, I shall only say it is a different one.

Mr. Justice LAWRANCE concurred.

Notes and News.

PARIS ACADEMY OF MEDICINE.—At a recent meeting of this distinguished society, Professor Arloing, Director of the Lyons Veterinary School, was elected a member.

NATIONAL VETERINARY SCHOOLS OF FRANCE.—The French Budget for 1893 fixes the amounts allowed for the maintenance of the three National Veterinary Schools of France and the Epizootic Service :—

Personnel of the Schools	437,000 francs.
Material for the Schools	564,000 „
Epizootic Service	277,800 „
Compensation for Slaughter of Animals	300,000 „

The last two items are the same as for 1892, but the amount for the teaching staffs is increased by 12,000 francs, and that of the material by 4,000 francs, the augmentations being granted in order to enlarge the teachers' salaries, and to institute in each school a chair for instruction in the pathology of other domestic animals than the horse.

VETERINARY INSTRUCTION IN AUSTRIA.—At the last general meeting of the Imperial and Royal Society of Agriculture of Austria, Councillor Schweinbach proposed that a new veterinary institute, devoted more particularly to bovine pathology, should be established at Salzburg. The proposal was favourably received by the Society.

HYPNOTISATION OF HORSES.—The *Revue Vétérinaire* quotes the following remarkable statement from the German periodical, *Das Pferd*:—Count Umpichy, of Megyes, County of Arpäder, well known as a breeder and as a sportsman, has obtained extraordinary results with horses by hypnotism or suggestion. In his trials, which took place in a very dark riding school, he employed as a medium a remarkably beautiful young peasant girl. Though his method of breaking-in is yet enveloped in mystery, it seems that the magnificent long fair hair of the medium has something to do in it. A thoroughbred stallion, very difficult to manage, was soon so subdued as to be ridden by a woman. Some half-bred horses were also brought in the same manner to go through the movements of the *haute ecole*, and to execute under the influence of suggestion, the *pas espagnol* and other exercises with the greatest precision.

A DIMINUTIVE FOAL.—An unusually small filly foal has been dropped in the Shethand pony shed, the property of the Ladies Hope. This animal, when one day old, measured 21½ inches in height, and, though so small, is strong and healthy.

Correspondence.

VETERINARY SURGERY *VERSUS* CRUELTY TO ANIMALS.

SIR,—Having read Mr. Pottie's communication upon the above subject, with your permission I should like to comment somewhat upon this matter, which can be considered as nothing less than monstrous, by suggesting an attempt to take the bread out of his fellow-man's mouth.

If Mr. Pottie had suggested that all, whether duly qualified or not, should pass an examination in practical castration of animals, he would have hit the point absolutely needed to be thoroughly threshed out. Without saying one word against your most honourable profession, I would ask, Are there not many, very many, armed with the diploma who are unable to perform the operation with anything approaching humanity or precision? I would suggest that, in the interest of humanity, the whole must first become practical ere an attempt is made to abolish a legitimate calling or trade which has been, and is now, recognised by many as one quite separate from that of the veterinary profession altogether. I myself have for many years operated on behalf of many of my qualified neighbours who, if they were of Mr. Pottie's way of thinking, would operate themselves. There are plenty of us, I know, who are ineligible to throw the hatchet, but who, I fear not, can hold our own, having been duly taught, practically, our trade or calling by men of recognised skill and ability.

As Mr. Pottie has set the ball rolling, I hope something may be done in this matter, and in a right direction. What is required, I know, are better operators, and without saying anything disrespectful, these are not always to be found in the ranks of duly qualified veterinary surgeons.

Thanking you much for space if you grant it,

C. W. HERBERT, Castrator, etc.

South Wigston, *May 22nd.*

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from Prof. McCall, Glasgow; C. W. Herbert, South Wigston; J. M. Goss, M.D., Marietta, Georgia, U.S.A.; H. B. Hale, Montgomery, Alabama, U.S.A.; H. G. Rogers, London; W. Bryden, Boston, U.S.A.; Veterinary-Captain J. A. Nunn, D.S.O., Lahore, India; H. C. Wilkie, Chatteris, Cambs.; Veterinary-Captain A. J. Haslam, Cawnpore; R. Rutherford, Edinburgh; A. W. Hill, London; J. E. Jarvis, London; J. B. Wolstenholme, Manchester.

BOOKS AND PAMPHLETS: *Professor C. Cadeac*, Pathologie Générale et Anatomie Pathologique Générale des Animaux Domestiques; *Veterinary-Major W. S. Adams*, A Treatise on the Diseases, Lameness, and Accidents to which the Horse is Liable; Bulletin de la Soc. Roy. Protectrice des Animaux de Belgique; Bulletin des Séances de la Soc. Nat. d'Agriculture de France; *G. Joly et E. Leclainche*, Etude sur la Gourme Cutanée; *C. T. D. Acland*, The Bickford System of Irrigation; Report of the Madras Society for the Prevention of Cruelty to Animals; Annual Report of the Operations of the Civil Veterinary Department in the Madras Presidency; Bulletin et Mémoires de la Soc. Centrale de Méd. Vétérinaire; Encyklopädie der Gesammten Thierheilkunde und Thierzucht, Lieferung 5, Band xi.; *F. R. Moody*, Notes on the Charger, Military Saddles, and Sore Backs; Bulletin of the Johns Hopkins Hospital;

JOURNALS, ETC.: *Farming World; Tierarzt; Ceylon Sporting Gazette; Journal of the Royal United Service Institution; Clinica Veterinaria; Journal de Méd. Vétérinaire et de Zootechnie; American Veterinary Review; Repertorium der Tierheilkunde; Agricultural Journal of the Cape of Good Hope; Modern Medicine and Bacteriological World; Revue Vétérinaire; Live Stock Journal; Annales de Méd. Vétérinaire; Moderno Zooiatro; Recueil de Med. Vétérinaire; Mark Lane Express; Baily's Magazine; Lancet; Edinburgh Medical Journal; British Medical Journal; Presse Vétérinaire; Echo Vétérinaire.*

NEWSPAPERS: *Lahore Civil and Military Gazette; Port Elizabeth Herald; Humansdorf Re-Echo; Madras Mail; Madras Times; Glasgow Courier; Madras Hindu.*